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EXPERIMENTS IN MUSICAL CREATIVITY, A REPORT OF PILOT PROJECTS SPONSORED BY THE CONTEMPORARY MUSIC PROJECT IN BALTIMORE, SAN DIEGO, AND FARMINGDALE.

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THREE PILOT PROJECTS WERE CONDUCTED IN BALTIMORE, MARYLAND, SAN DIEGO, CALIFORNIA, AND FARMINGDALE, NEW YORK, WITH ELEMENTARY AND JUNIOR HIGH SCHOOL STUDENTS. THE PROJECTS IN BALTIMORE AND SAN DIEGO PROVIDED INSERVICE SEMINARS FOR MUSIC TEACHERS ALONG WITH PILOT CLASSES IN DIFFERENT TYPES OF SCHOOLS. OBJECTIVES OF THESE TWO PROJECTS WERE PRESENTATION OF CONTEMPORARY MUSIC TO CHILDREN THROUGH SUITABLE APPROACHES, EXPERIMENTATION WITH CREATIVE MUSIC EXPERIENCES FOR CHILDREN, IDENTIFICATION OF CONTEMPORARY MUSIC APPROPRIATE AT SEVERAL GRADE LEVELS, PROVISION THROUGH CONTEMPORARY MUSIC OF NEW MEANS OF CREATIVE EXPERIENCING, AND INSERVICE EDUCATION OF TEACHERS. THE PILOT PROJECT IN FARMINGDALE WAS DESIGNED TO DEMONSTRATE TWO TYPES OF CREATIVE TEACHING--EXPERIMENTAL TECHNIQUES IN MUSIC COMPOSITION USING 20TH CENTURY IDIOMS AND THE DEVELOPMENT OF MUSICAL RESOURCES THROUGH RHYTHMICS, SINGING, IMPROVISATION, AND COMPOSITION. THE INTEREST AND MOTIVATION WHICH RESULTED ON THE PART OF TEACHERS AND PUPILS WERE VIEWED AS SUPPORTING THE PREMISE THAT CHILDREN ARE RECEPTIVE TO CONTEMPORARY MUSIC AND ARE CAPABLE OF EMPLOYING CONTEMPORARY TECHNIQUES IN CREATIVE ACTIVITIES. RECORDINGS OF SOME OF THE CONTEMPORARY MUSIC USED IN THE PROJECTS ARE LISTED. THIS DOCUMENT AS PUBLISHED BY THE MUSIC EDUCATORS NATIONAL CONFERENCE, 1201 16TH STREET, N.W., WASHINGTON, D.C. 20036. (CB)

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EXPERIMENTS IN MUSICAL CREATIVITY

CMP 3

A report of Pilot Projects
sponsored by the *Contemporary Music Project*
in Baltimore, San Diego, and Farmingdale

CONTEMPORARY MUSIC PROJECT / MUSIC EDUCATORS NATIONAL CONFERENCE

Washington, D.C. 1966

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is administered by the Music Educators National Conference
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Norman Dello Joio, Chairman
Grant Beglarian, Director

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EXPERIMENTS IN MUSICAL CREATIVITY

INTRODUCTION

The *Contemporary Music Project* represents an outgrowth of a project for young composers in residence which began in 1958 under the auspices of the Ford Foundation Program in Humanities and the Arts. The current project was authorized in 1963 under a six-year grant of $1,380,000 from the Ford Foundation to the Music Educators National Conference. In addition to continuing fellowships to young composers in residence in school systems, the current project includes:

1. Seminars and workshops for music educators in cooperation with colleges and universities
2. Pilot projects in elementary and secondary schools to study methods of presenting contemporary music and to bring about a full realization of musical talent through creative experiences, improvisation, and composition

It is recognized that many school systems have long emphasized creative activities as an integral part of the elementary school music curriculum. These experiences have included creative interpretation of songs and dances, use of rhythm instruments, and composition of simple songs. The use of contemporary music as part of these experiences has been infrequent. This undoubtedly has been due to (1) the assumption that music can best be taught through a chronological approach, and (2) the limited background of music teachers with respect to contemporary music.

Three Pilot Projects involving elementary and junior high school students were sponsored by the *Contemporary Music Project* during the spring and summer of 1964. These Projects, considered to be exploratory and experimental in nature, were conducted in cooperation with school systems in Baltimore, Maryland; San Diego, California; and Farmingdale, New York. Although the scope and content of the three Projects included contemporary music and creative experiences in improvisation and composition, they were designed to serve somewhat different objectives.

The Projects in Baltimore and San Diego were organized to provide an in-service seminar for music teachers in conjunction with pilot classes at selected grade levels in different types of schools. The

seminars met each week, were conducted by a composer-consultant, and involved the study and analysis of contemporary music and assignments in musical composition using various contemporary techniques. The pilot classes, taught by teachers participating in the seminar, served as laboratory groups for experimentation with techniques and materials presented in the seminar. Weekly reports were made to the seminar by the pilot class teachers.

The objectives of these projects were:

1. To find suitable approaches for the presentation of contemporary music to children at several grade levels
2. To experiment with techniques for providing creative music experiences for children
3. To identify contemporary music suitable for use with students at the several grade levels
4. To provide a new dimension in creative experiences through the use of contemporary music
5. To provide in-service education for teachers

The Farmingdale, New York, Pilot Project represented a different approach, and was designed to demonstrate two types of creative teaching. In contrast to the Projects in Baltimore and San Diego this Project was conducted with a selected group of thirty-one musically talented children from grades six, seven, and eight, for a six-week period during the summer of 1964.

The objectives of this project were:

1. To demonstrate experimental techniques in musical composition using 20th-century idioms
2. To demonstrate the development of musical resources through rhythmics, singing, improvisation, and composition

Recent renewed interest in creativity in the entire curriculum has brought about a resurgence of interest in this aspect of the music education. While previous activities of this type usually have been focused upon creative experience with traditional musical styles and materials, the emphasis on contemporary music in the Pilot Projects represents a new dimension.

It should not be inferred that the results of these Projects present evidence that creative experiences should necessarily begin with contemporary music. The projects were designed to explore approaches rather than to develop curriculum sequence. While the implications suggested by these Projects are encouraging, further investigation is indicated. The hypothesis that a creative approach to musical learning is more effective than traditional methods can be tested fully only on a longitudinal basis over a longer period of time. The realization that children are receptive to contemporary music is only a first step. Implementation will require further study, development, and refinement. It is hoped that this report will provide some indication of the receptivity of children at different grade levels to contemporary music and suggest some suitable teaching materials and approaches.

The *Contemporary Music Project* acknowledges its appreciation to all participants in the seminars and Pilot Projects.

Special recognition is due to the pilot class teachers; to John Colman, Emma Lou Diemer, and David Ward-Steinman, who served as consultants; and to Herbert Alper, Alice Beer, and Mary Val Marsh who were the coordinators and whose excellent reports were the major source of material for this publication.

R. Bernard Fitzgerald
Former Director, *Contemporary Music Project*
June 1965

BALTIMORE PROJECT

Baltimore Public Schools
Baltimore, Maryland

CREATIVE APPROACHES TO CONTEMPORARY MUSIC IN THE ELEMENTARY SCHOOL

COORDINATOR:
Alice Beer
Supervisor,
Elementary Music Education

COMPOSER-CONSULTANT:
Emma Lou Diemer
Arlington, Virginia

Marion Magill
Director of Music Education

George B. Brain
Superintendent of Schools

BACKGROUND OF THE PROJECT The exploration of contemporary music, creativity, and improvisation present a challenging and stimulating approach to musical growth both to the children and those concerned with the program of music education in the Baltimore City school system.

Contemporary music is frequently a neglected area of music study for the music teacher. Consequently, many music teachers fail to include it in the course of study, or if it is included, it is frequently dealt with in a superficial manner. There is also the problem of identifying contemporary music suitable for elementary school use.

For many years music teachers in the Baltimore City Schools have experimented with creative approaches to music education. The creative interpretation of songs, dances, and instrumental selections is a part of the music program in most elementary classrooms. Creativity has been evidenced in the use of rhythm and accompanying instruments. For at least the past fifteen years, both music and classroom teachers have encouraged the composition of simple songs as part of classroom music experiences. However, the methodology and ensuing results frequently have been of questionable musical value.

Improvisation rarely has been encouraged within the school program of music education. Yet, almost without exception, successful composers and musicians were and are skilled in the art of improvisation. It is tenable to assume, then, that improvisation could become an important means of identifying and fostering creative and musical talent.

ORGANIZATIONS

1. A seminar each week for the elementary music staff, conducted by the composer-consultant.
2. Classroom implementation of ideas presented in the seminar.
   (1) Music staff members enrolled in the seminar were encouraged to experiment with materials and techniques in elementary classes
   (2) Four pilot schools, with two pilot classes in each school, were selected for special emphasis

THE SEMINAR The purposes of the seminar were as follows:

1. To study and analyze contemporary music through listening, singing, playing, moving, composing, and improvising
2. To develop the music teacher's skill in hearing and understanding contemporary music
3. To identify ways of presenting contemporary music to children through an understanding of rhythm, melody, harmony, and form
4. To identify specific compositions for listening and performance, which will contribute to a sequential growth in understanding of the contemporary sound in music

Since the effectiveness of the teacher is a crucial factor in any learning situation, a brief resume of the background and experience of the seminar participants is pertinent.

The 30 elementary music resource teachers in the seminar represented a wide range of ability and training in music. Approximately half of these teachers had completed a master's degree or an equivalent number of credits. About half of the group had taught for twenty years or more. The majority of the remaining group had taught from five to ten years, and three were first-year teachers. A few

members of the group were former classroom teachers, who had taken additional work to become certified as music teachers.

Four of the teachers expressed an unusual interest in contemporary music as the result of previous study. Four others expressed a special interest in improvisation and creativity because of their own ability and the results they have been able to achieve in teaching children. Eleven participants volunteered for special assignments with pilot classes.

The four music teachers assigned to the pilot classes represented a wide range of experience and tenure.

The backgrounds and attitudes of the seminar participants have particular relevance, since the interest of teachers not trained in the techniques of contemporary music might be questioned.

The seminars conducted by the composer-consultant developed the following pattern. Examples of representative styles in contemporary music were discussed and heard through illustrations at the piano and recordings. The seminar participants were given assignments using the techniques and ideas that had been presented. At subsequent meetings of the seminar, each teacher's composition was performed for or by the group, followed by discussion and evaluation.

The seminars were planned to emphasize the basic elements of music: melody, harmony, or rhythm, presented in the following sequence.

1. MELODY	2. HARMONY	3. RHYTHM
Scales:	Bitonality	Irregular meters
modal	Triads plus major or minor thirds	Changing meters
whole tone	Added 9ths and 11ths	Unusual use of accent
pentatonic	Added 6ths	Polyrhythms
artificial	Polychords	Syncopation
Tone rows	Use of 2nds	
Other sound sources	Chords of 4ths	
(electronic music)	Clusters	

At the outset, musical examples selected for analysis were chosen from sources that were familiar and available for use in the school system. The following list of contemporary songs is from the *Music for Living Series,* published by

the Silver Burdett Company, and is annotated to identify the contemporary techniques employed.

Book 1	57	In the Farmyard	chromaticism, change of note values
	80	Bell Buoys	harmonic surprise near end, does not end on tonic
	86	Pounding Waves	interesting accompaniment, natural minor scale
Book 2	6	Leaky Faucet	conventional—with sound effects
	16	Firefly	some harmonic surprises
	18	Bouncing Rabbits	use of rests, ostinato accompaniment delaying of tonic to end
Book 3	60	The Foghorn	modal accompaniment
	106	Stars	dissonant, atmospheric accompaniment elongated final note of phrase, easy melody
Book 4	78	Africa	good accompaniment—chord clusters melody uses major and minor, short-short-long rhythm
	95	Our History Sings	modal
	106	Freight Boats	good rhythm and harmonization
Book 5	59	Wheat Fields	modal, interesting harmony
Book 6	28	Rain in Autumn	changing meter, occasional raised 2nd
	124	Viking Song	interesting accompaniment, natural minor melody
	134	Night Journey	modal, changing meter, dissonant accompaniment

A similar procedure was followed with reference to contemporary music included in the RCA *Adventures in Music* Series of recordings, which was accessible for use in the schools. Recorded examples used in the seminar are starred(*).

Grade 1	47	Kabelevsky, "Pantomime"* from *The Comedians* Prokofiev, "March" from *Summer Day Suite* Thomson, "Walking Song" from *Arcadian Songs and Dances*	ostinato in bass, chromatic succession

Grade 2	44	Milhaud, "Laranjeires"• from *Saudades do Brazil*	repeated rhythms, dissonance, harmonization interest, unusual ending, bitonality
		Bartók, "Jack-in-the-Box" from *Mikrokosmos Suite No. 2*	
Grade 3, Vol. 2	12	Bartók, "Bear Dance"• from *Hungarian Sketches*	repeated note, chords— dissonant to repeated note percussive
		Thomson, "The Alligator and the Coon" from *Arcadian Songs and Dances*	
Grade 4, Vol. 2	12	Milhaud, "Copacabana"• from *Saudades do Brazil*	rhythms, tango, maxixe bi-tonality dissonance—chords moving away from each other
		Kodaly, "Entrance of the Emperor and His Court" from *Hary Janos Suite*	
		Menotti, "Shepherds Dance" from *Amahl and the Night Visitors*	
Grade 4, Vol. 1	78	Ginastera, "Wheat Dance"• from *Estancia*	interesting rhythmic effect— shifting accent
Grade 5, Vol. 1		Gould, *American Salute*	
Grade 5, Vol. 2	37	Copland, "Hoe-Down"• from *Rodeo*	accent on off-beat kind of ostinato sudden change of tonality
	22	Bartók, "An Evening in the Village"• from *Hungarian Sketches*	
Grade 6, Vol. 1	70	Copland, "Street in a . .ontier Town"• from *Billy the Kid*	
Grade 6, Vol. 2		Walton, "Valse" from *Facade Suite*	
	12	Guarnieri, "Brazilian Dance"• from *Three Dances for Orchestra*	rhythmic patterns— several occurring simultaneously

SEMINAR ASSIGNMENTS Composition assignments were made in the following order:

1. Compose a modal melody setting a short poem.
2. Experiment with original rhythm scores for classroom percussion instruments.
3. Experiment with harmonization of a familiar folk tune, using contemporary techniques.
4. Experiment with other sound sources (kitchen utensils, glasses, homemade instruments).
5. Compose and perform tone-row compositions for classroom instruments.
6. Compose and improvise using irregular compound meter.
7. Compose a song (with accompaniment, employing musical ideas explored during the semester).

Throughout the seminars the topic of improvisation was mentioned in connection with nearly every idea discussed. The music teachers found the following suggestions to be helpful:

1. The music teacher or a student may conduct several players in a session of improvisation.
2. Establish a basic beat played by a percussion instrument as background for improvisation by one or more members of the class.
3. Introduce a repeated rhythmic pattern as a background for improvisation.
4. Initial improvisations employing pitch may be limited to an artificial scale, pentatonic scale, whole-tone scale, etc.

5. Insist upon the children listening to and evaluating their effort.
6. Suggest that the instruments "have a conversation."
7. Ask children to "play your instrument when you have something to say."
8. Avoid monotony by adding and subtracting instruments.
9. Create interest by changing meter.
10. Use a variety of means to introduce the element of surprise.

An opaque projector was utilized in the seminar to observe musical scores and compositions. Its use also enabled members of the group to perform and study each other's original compositions. Tape recorders were used extensively in recording original compositions and improvisations by teachers and pupils.

PILOT CLASSES Four schools representing a cross-section of types in the community were chosen as sites for pilot classes. A brief description of each will serve to indicate the range and scope of the schools which were involved.

1. An inner city school, located in a crowded section of the city, with a low socio-economic level	*Pilot classes:* Kindergarten and first grade
2. A school, located in an old section of the city, with an average socio-economic level	*Pilot classes:* A first-grade class and a combination first- and second-grade class
3. A school, located in a residential area, with an above-average socio-economic level	*Pilot classes:* Third and fourth grades
4. A suburban area-type school, with a high socio-economic level	*Pilot classes:* Fifth and sixth grades

The two pilot classes in each school were selected by the music teacher and the principal. Although no attempt was made to choose classes that were academically or musically gifted, evidence of a favorable climate for creativity was an important consideration. None of the classroom teachers involved professed any technical skill or knowledge of music; however, all were dedicated teachers and indicated an interest in music.

Pilot Class Activities Each pilot class was introduced to contemporary music from the *Music for Living* Series and the RCA *Adventures in Music*. During the semester, children in each pilot class demonstrated an increasing interest and a noticeable development of skills in aural discrimination, performance, and music reading.

Music teachers enrolled in the seminar stimulated creativity in children in a variety of ways. Some teachers isolated rhythmic patterns used in contemporary compositions and encouraged children to interpolate them in their own percussion compositions. Some teachers composed a melody and encouraged the children to improvise an accompaniment. Others composed songs for which the children developed suitable dances. Many teachers experimented with improvisation using some of the suggestions presented in the seminar. Several teachers improvised piano accompaniments for original percussion compositions by the children.

The following summary of activities of the pilot classes during the project serves to indicate the nature rather than the extent of their involvement, since only one class period per week was usually devoted to the study of contemporary music.

1. Kindergarten and first grade The children in these classes were provided many opportunities to respond to contemporary music through movement. Class projects included composing several songs, experimenting with irregular meters through compositions for percussion instruments, performing songs written in contemporary idioms, and some improvisation. Their story compositions with sound effects were their most original and distinctive contribution. Their enthusiasm and convincing performance was evident to audiences and observers.

The interest and support of the school administration is indicated by the following quotation from a report prepared by the vice-principal who maintained close contact with the classes throughout the semester.

> "Acting creatively comes naturally with most children whether they are reliving an earlier experience, or experimenting with ideas, or attempting to find meaning in a particular situation, or relieving tensions. Inasmuch as creativity is developed rather than taught, the arts lend themselves well to this type of development in children.
>
> "Not only was development noticed in the creative abilities of the children, but there was evidence of growth in oral language skills and reading.
>
> "The project resulted in:
>
> 1. The purchasing of story records for children by their parents.
> 2. Improvement in oral expression
> 3. Extension of the pupils' speaking vocabulary
> 4. An interest in creative activities in music in other classes
> 5. Closer relationships with parents who visited the school to inquire about the music program
> 6. Opportunities for the children to appear in large audience situations and on television
> 7. The development of a greater interest in music on the part of other teachers."

2. First and second grades These classes sang songs written in a contemporary style, composed songs, employed percussion instruments in a variety of creative experiences, experimented with Musique Concrète, and explored nearly all of the ideas discussed in the seminar. However, their experiences with creative rhythmic movement and dances was their most original and distinctive contribution. The music teacher made extensive use of drawings and charts illustrating line and color in music. From this approach, the children developed an understanding and feeling for contrast in music such as long-short, high-low, smooth-jerky. Freedom and creativity were nurtured and developed to the extent that chil-

dren who appeared inhibited and reserved at first, later responded freely and expressively to music of our times.

3. Third grade It was difficult to reconcile the extraordinary growth in musical understanding with the fact that the majority of the students were only eight years old. They improvised with enthusiasm, improved in singing, and listened to longer and more complex compositions. They experimented with Musique Concrète; and when they played their composition for percussion on the large variety of objects brought from home, they discovered that plucked rubber bands could not be heard without a resonating chamber and that the rattle of cellophane being crushed did not have enough sonority to be included in their composition. The exploration of the 12-tone row held the greatest appeal to this group. They took pride in one of their tone rows; and, when it was played in the rhythm of a familiar folk song, it became one of their favorite compositions.

4. Fifth and sixth grades This group was a constant source of inspiration to those associated with the project. There seemed to be no limitation regarding the amount of information this group could absorb and use. They not only sang, played, and listened to the music presented but also developed skill in identifying those characteristics in the music which contribute to a contemporary sound.

These classes composed melodies using church modes, and learned how these scales differ from major and minor scales. Folk songs were transposed and adapted to various modes. Their knowledge of music theory and skill in playing classroom instruments enabled them to harmonize folk songs bitonally with considerable ease. The children vied for the opportunity to improvise. Self-evaluation and criticism provided additional depth to these learning experiences. Although these classes included some experience with 12-tone composition, it was evident that some of them felt this style of composition was too restrictive.

Summary and Implications The culmination of the project was a Contemporary Music Festival at the end of the semester. This program was presented by classes from twelve elementary schools to an audience of 1900 elementary school children

from 29 schools. The program was planned to demonstrate the scope and sequence of the project and included original compositions, creative rhythmic interpretations of contemporary compositions, original dances, and improvisations. Performance media included singing, playing classroom rhythm and percussion instruments, autoharp, bells, and xylophone.

The final compositions on the program, composed for the occasion by the composer-consultant, Emma Lou Diemer, combined singing, classroom instruments, and piano. "A Little Song of Life" and "Seven Limericks" were performed by a fifth- and sixth-grade chorus.

This presentation was attended by many administrators from the Baltimore Public Schools and guests from the surrounding area. The following excerpts from letters commenting on the program are representative of the interest and enthusiasm resulting from this event.

> "As group after group of pupils (some of them seemed barely past the baby stage) performed intricate dance steps or musical compositions my astonishment grew. The improvisations were particularly amazing."
>
> "It was an amazing exhibition of the use of children's creative ability. Certainly this posed a real challenge to all of us for if this can be done in the area of music, why not in other areas of curriculum?"
>
> "I truly wish all of our elementary music teachers could have had the opportunity to see the presentation. It was *real* music, and truly an inspiration."

The impetus provided by the project led to consideration of ways in which ideas and practices could be continued and expanded to involve many additional schools. Most music teachers enrolled in the seminar indicated their interest in continuing to explore creative approaches and in introducing children to contemporary music. However, the classroom teacher has the major responsibility for the music program on a day-to-day basis, with the music teachers serving as resource consultants. Therefore, it was necessary to identify goals and procedures that could be implemented successfully by classroom teachers. The following is a description of the extension and further development which occurred during the 1964–1965 school year.

In the spring of 1964 several principals indicated an interest in a faculty study as a result of a report of the Project presented to a meeting of Elementary Principals, Vice-Principals and Supervisors. Plans were immediately formulated to use faculty meetings for seminars on creativity within those schools during the 1964-1965 school year. Two entire school-faculty groups devoted one meeting each month to this study. In numerous other schools, interested teachers met with members of the music staff during the noon hour. In several areas of the city, interested teachers from schools in the neighborhood met informally with members of the music staff. It is estimated that between two and three hundred classroom teachers were involved to some extent in these meetings. In addition, music teachers in many schools worked individually with classroom teachers.

CONTENT OF THE SEMINARS ON CREATIVITY Three topics were studied in these seminars: "Sounds Around Us," "Creative Interpretation of Contemporary Music," and "Improvisation and Composition." Because classroom teachers frequently indicate a feeling of inadequacy with the technical aspect of music, "Sounds Around Us" seemed to be an appropriate point of departure. The important purpose in selecting this topic was to try to open the ears of children and teachers to sounds that contemporary composers are utilizing and to stimulate children's creative self-expression through the use of sounds. Many teachers had heard the popular rhythm instrument accompaniment of "Hickory Dickory Dock" (rhythm sticks and tone blocks for tick tock; glissando for mouse running up and down; triangle for clock striking). Without identifying the title of the nursery rhyme, this accompaniment was played with the suggestion that teachers in the group determine what nursery rhyme the instruments were representing. This illustration was followed by reference to ways in which composers of the past had used instruments to represent an object, a picture, or a story, e.g., Haydn's use of pizzicato for ticking in the *"Clock" Symphony,* Beethoven's use of percussion in the *Sixth Symphony* to represent a storm. It was pointed out that composers have frequently told stories or painted pictures through sound. To illustrate a contemporary composition of this type, one of Gunther Schuller's studies on themes of Paul Klee, *The Twittering Machine,* and Henry Cowell's *Conversation in a Chinese Laundry* were heard. The use of

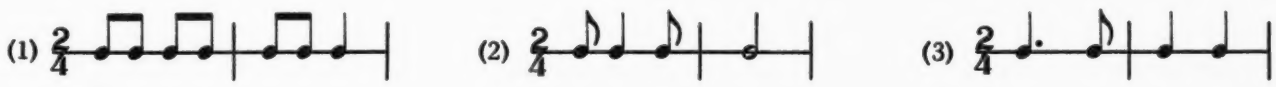
other sound sources by composers such as Tchaikovsky (the cannon in *Overture 1812*) and Respighi (nightingale's song in *Pines of Rome*) was discussed. Electronic music was also introduced briefly. The two important purposes of these sessions were to focus participants' attention on all kinds of sounds and to stimulate their interest in contemporary music. Spirited discussion ensued concerning some of the sounds heard and the meaning of the words *music* and *composition*. It was at this point that evaluative criteria prepared by the consultant were introduced and discussed.

GUIDELINES FOR EVALUATION

Does it carry out the intent of the composer?
Does the material create interest?
Does it have an interesting beginning?
Does it have a decisive ending?
Does it have unity? (re-occurring pattern—melodic, rhythmic, harmonic)
Does it have contrast? (Is new material introduced for interest?)
Does it have a feeling of tension and release? (tempo-dynamics, pitch, instrumentation)
Does the melody line have direction or does it wander aimlessly?
Is there climax?

The second idea, "Creative Interpretation of Contemporary Music," was next explored with the faculty groups. Teachers discussed the variety of ways in which children could express themselves creatively: through oral and written English, through the use of some art media, through bodily movement including pantomime, and by playing an instrument or singing. Meeting time was devoted to listening to contemporary music and to simple analysis. They discussed mood, story and picture music, and structure. Such compositions as Bartók's *Sonata for Two Pianos and Percussion*, excerpts from Stravinsky's *The Firebird*, and excerpts from Virgil Thomson's *Arcadian Sketches*, were well received by classroom teachers.

The third topic, "Improvisation and Composition," was explored in a variety of ways. One of the most popular was to start with one known element of music and then to make various additions and changes in it. For example the folksong, "Little Liza Jane," is made up of three rhythmic ideas:



These ideas are arranged as follows in the folk song:

(1) (2) (1) (2)
(3) (2) (3) (2)

In the seminars teachers rearranged the rhythmic patterns in various sequences, orchestrated them with a variety of instruments, and sometimes incorporated them in an original tone row. This same idea was sometimes applied to instrumental selections such as Virgil Thomson's *The Alligator and the Coon*.

Some teachers experimented with different ways in which musical instruments could carry on a conversation, could suggest the names of children or birds, or could reproduce the rhythm of television commercials. Sometimes a steady 4/4, 2/4, or 3/4 meter was used as a unifying element for free improvisation. In a few instances, irregular and changing meters were introduced through the use of Brubeck's *Three To Get Ready* and *The Unsquare Dance*. For example, teachers could hear and see the rhythmic ideas more readily when charted simply, as follows:

Three To Get Ready

The Unsquare Dance $\frac{7}{4}$ L R L R L R R | L R L R L R R | etc.

CLASSROOM ACTIVITIES A wide variety of activities has resulted from this emphasis on contemporary music and creativity. Classroom teachers tried many of the approaches described above. Some classes set poetry to music, attempting to illustrate characteristics of contemporary music. One class studied Japanese music as a part of a social studies unit on Japan, and as a result, composed music in the style of the Japanese. Sometimes an abstract musical idea was used as a point of departure. For example, after a discussion of some of the means composers use to build a climax in music, one ten-year-old boy composed a piece for percussion, illustrating a way in which he achieved a climax in his composition.

Classes were encouraged to share their efforts with others as frequently as possible. This tended to help children refine and clarify communication and stimulated ideas and thought. On numerous occasions classes spontaneously shared creative endeavor with other classes and individuals. In some schools parents were invited to visit classes and to see auditorium programs designed to acquaint them with this program of music education. Inter-School Sharing Festivals were popular. Three television programs were presented as a public service by the NBC outlet in Baltimore, WBAL-TV.

Attempts at evaluation were constantly made by children, teachers, administrators, and music staff members. Sometimes three criteria were employed:

1. Does it carry out our intent?
2. Does it have unity?
3. Does it have variety or interest?

Children and classroom teachers often asked music staff members for assistance in their evaluation and requested suggestions for next steps.

Sometimes there was no attempt at formal evaluation, but pupils made choices through trial and error that gave them greater satisfaction in their work. Many teachers mentioned improvement in children's selection and use of the classroom instruments.

LOOKING TO THE FUTURE There is little doubt that these ideas will spread and become an integral part of the music curriculum. Dedicated classroom teachers are interested in fostering creativity in children. Most of them are accepting the contemporary sound in music. Two main ideas will be explored during the 1965–1966 school year. First, children will be encouraged to compose in a free style, with the role of the teacher being that of a guide to help children discover their own need for additional music skill, and their need for a better understanding of how composers have worked in the past. The second idea will be to pursue ways in which children can take one given element of the music and rearrange or change it in some way to compose a satisfying piece of music. In both of these approaches to musical creativity, the importance of the student's search for knowledge of how composers of all ages have worked and created will be stressed. Music of today for today's children will be studied, but not to the exclusion of other periods and styles. Every attempt will be made to foster the musical creativity of each child.

RECORDINGS RECOMMENDED FOR CLASSROOM USE AND FOR PRIVATE STUDY

COMPOSER	TITLE	NUMBER
Rhythm		
Barber	Commando March	Mercury MG 50079
Bartók	Dance Suite	Mercury MG 50183
Bartók	Roumanian Dances	Mercury MG 50132
Bernstein	Candide Overture	Austin 6240
Bernstein	Fancy Free (Danzon)	Columbia CL 920
Bernstein	West Side Story	Columbia OL 5230
Copland	El Salón México	RCA Victor LM 1928
Hanson	Merry Mount Suite (Children's Dance)	Mercury MG 50175
Honegger	Pacific 231	London LL 9119
Khachaturian	Masquerade	Capitol P 8530
Khachaturian	Sabre Dance	Capitol P 8530
Milhaud	Creation of the Earth	Columbia CL 920
Milhaud	Saudades do Brazil	Vanguard 1023
Persichetti	Divertimento	Mercury MG 50079
Stravinsky	The Firebird (Infernal Dance)	Columbia ML 5728
Stravinsky	The Rite of Spring	Columbia ML 5719
Villa-Lobos	The Little Train of the Caipira	Columbia CL 798
(Cage, Cowell, etc.)	Concert Percussion for Orchestra	Time 58000
———	Music of Bali	Period SPL 1613
Brubeck	Time Out	Columbia CL 1397
Brubeck	Time Further Out	Columbia CL 1690
Melody		
Barber	Adagio for Strings	Philips 500001
Bartók	Concerto for Orchestra	Columbia ML 5471
Britten	Young Person's Guide to the Orchestra	Columbia ML 5183
Hanson	Merry Mount Suite	Mercury MG 50175
Hindemith	Mathis der Maler	Columbia ML 4816
Orff	Carmina Burana	Angel 35415
———	Music of Bali	Period SPL 1613

Long Melodic Lines

Barber	Adagio for Strings	Philips 500001
Bartók	Concerto for Orchestra	Columbia ML 5471
Hindemith	Mathis der Maler	Columbia ML 4816
Shostakovich	Symphony No. 5	Everest 6010
Villa-Lobos	Bachianas Brasileiras	Capitol L 8043

Harmony

Bartók	Sonata for Two Pianos and Percussion	Vox 9600
Schuller	Seven Studies after Paul Klee	Mercury MG 50282
Shostakovich	Symphony No. 5	Everest 6010
Stravinsky	Octet for Winds	Columbia ML 4964
Villa-Lobos	Bachianas Brasileiras No. 2	Capitol L 8043

Form

Bartók	Concerto for Orchestra	Columbia ML 5471
Bloch	Concerto Grosso For String Orchestra with Piano Obbligato	Mercury MG 50223
Britten	Young Person's Guide to the Orchestra	Columbia ML 5183
Hindemith	Mathis der Maler	Columbia ML 4816
Kabalevsky	The Comedians	Capitol P 8530
Khachaturian	Masquerade	Capitol P 8530
Milhaud	Suite Française	Mercury MG 50173
Milhaud	Suite Provençale	RCA Victor LD 2625

Percussion

Antheil	Ballet Mécanique	Columbia ML 4956
Bartók	Sonata for Two Pianos and Percussion	Vox 9600
(Cage, Cowell, etc.)	Concert Percussion for Orchestra	Time 58000
———	Music of Bali	Period SPL 1613

Improvisations

Brubeck	Dialogues for Jazz Combo and Orchestra	Columbia CL 1466
Foss	Time Cycle (Soprano and improvisation ensemble)	Columbia ML 5680

Twelve-Tone

Berg, Schoenberg, Křenek	Piano music (Glenn Gould, pianist)	Columbia ML 5336
Berg, Schoenberg, Webern	Orchestra works	Columbia ML 5616
Webern	The Complete Music (Robert Craft, conductor)	Columbia K4L 232

Electronic Music and Musique Concrète

Powell	Electronic Setting	Son Nova 1
Stockhausen	Gesang der Jünglinge	Deutsche Grammophon 138811
Ussachevsky	Piece for Tape Recorder	CRI 112
Varèse	Poème Électronique	Columbia ML 5478
(Babbitt, Luening, etc.)	Columbia-Princeton Electronic Music Center	Columbia ML 5966
(Cage, Cowell, etc.)	Sounds of New Music	Folkways FX 6160

SAN DIEGO PROJECT

San Diego City and County Schools, San Diego, California

DEVELOPING MUSICAL UNDERSTANDING THROUGH CONTEMPORARY MUSIC

COORDINATOR: *Mary Val Marsh,* San Diego, California
COMPOSER-CONSULTANT: *David Ward-Steinman,* San Diego State College

Kenneth Owens, Music Specialist, San Diego Unified School District
Ralph C. Dailard, Superintendent, San Diego Unified School District
Janice Schroeder, Music Coordinator, San Diego County Schools
Cecil D. Hardesty, Superintendent, San Diego County Schools

PROJECT STAFF: *Charlene Archibeque, Joann Ford, Douglas Massey*
David Ward-Steinman, Susan Ward-Steinman, Mary Val Marsh

BACKGROUND OF THE PROJECT The development of this Project was prompted by concern regarding the limited emphasis given to contemporary music as part of the music curriculum in most elementary and junior high schools. Teachers of music with whom the topic was discussed were usually vague in regard to suitable materials and teaching techniques that might be appropriate in presenting 20-century music to younger children. A few expressed the opinion that children should become familiar with the "traditional" or "standard" repertory before being introduced to newer compositions whose merit may as yet be unproven.

Thus there appeared to be considerable justification for a Project that would explore the desirability of and methods for teaching contemporary music to children at various grade levels in the elementary and junior high school. The project was based on the following hypothesis:

1. Children are entitled to a well-balanced education in music, including a representative sampling of music literature. The difficulty of determining a "basic" repertory for children is complicated by the vast amount of music available. Since it is not possible to present as much music as might be desirable within the limitations of the school schedule, it is logical to assume that the selection of materials should be representative of many periods and styles, including music in the contemporary idiom.

2. Research suggests that children are most receptive to new sounds before the age of eight years. Authorities in the field of verbal communication report that after this age it is almost impossible for a child to assimilate the "native" inflection of a language other than his own. Thus it would seem that the young child, exposed to the sounds of contemporary music, would be more receptive and likely to accept them as "normal" rather than reject them as "strange" should this exposure occur later in life.

3. Children are a part of their contemporary world. Today's children accept innovations in travel, science, mathematics, and medicine as commonplace, and such innovations are continually being incorporated in the school curricula on a nation-wide basis. Children are also entitled to learn about contemporary thought and creative accomplishment in music.

PURPOSE The broad basis for the project was "to explore possibilities for teach.ng contemporary music in the elementary and junior high school."

Specific objectives were:

1. To provide an opportunity for a selected group of music educators to broaden and deepen their understanding of contemporary music, under the leadership of a specialist in this field
2. To investigate aspects of contemporary music that might be most interesting and significant to children at various age levels, and to test these materials in selected classroom situations
3. To locate and select contemporary music suitable for teaching children, considering varying levels of interest and length of attention span
4. To develop techniques and approaches for presenting these materials in typical classroom situations

ORGANIZATION

1. A two hour seminar each week for the teachers enrolled, conducted by the composer-consultant
2. Classroom implementation of the seminar in three pilot classes in the San Diego Schools

THE SEMINAR Twenty-eight music supervisors and classroom teachers from the San Diego City and County school systems participated in the seminar. The seminars were conducted in a lecture-demonstration format by the composer-consultant. Reports of the activities of the pilot classes during the previous week were presented to the seminar each week by the pilot-class teachers.

The seminar content was organized to focus on the elements of rhythm, melody, and harmony as used by contemporary composers. The formal structure of music was considered in relation to the compositions being studied. The following outline indicates the general sequence of topics and materials presented, and includes a list of most of the musical examples that were used.

General Survey and Seminar Outline

1. Representational music
2. Non-representational music
3. Musical form

Development of New Sound Sources

1. The sound sources of an age, broadly speaking, help establish the styles of music of the period, and vice versa.
2. The history of instrumental development from primitive times to the 19th-century orchestra supports this thesis.
3. The responsibility of teachers is to open minds (and *ears*) to accept the idea of new sounds in music.
4. Contemporary composers may simulate or use literal sounds.
   - Gershwin, *An American in Paris*
   - Respighi, *The Pines of Rome*
   - Rogers, *Leaves from the Tale of Pinocchio*
   - taxi horns
   - recorded nightingale
   - serpent's tail—sandpaper on bass drum
5. Contemporary composers may create entirely new sound sources.
   - Bartók, *Mikrokosmos*, Vol. IV, No. 102
   - harmonics

Cage, *Amores*	prepared piano and percussion
Cage, *Dance*	
Chavez, *Toccata for Percussion*	
Copland, *Piano Variations*	harmonics from sympathetic vibration of unstruck keys
Cowell, *The Aeolian Harp*	
Cowell, *Banshee*	plucking and hitting piano strings
Debussy, *Sirènes*	voices used instrumentally
Foss, *Time Cycle for Soprano and Orchestra*	sympathetic vibration of strings fingered only while one player plays
Harrison, *Suite for Violin, Piano, and Small Orchestra*	tack-piano, simulated gamelon sounds
Milhaud, *Les Choëphores*	chanting chorus with percussion accompaniment
Milhaud, *Concerto for Percussion and Small Orchestra*	
Partch, *Plectra and Percussion Dances*	use of new instruments; 43-tone octave
Partch, *The Wayward* (U.S. Highball)	
Partch, *Thirty Years of Lyric and Dramatic Music*	

Rhythm in Contemporary Music

1. The first important use of rhythm as a structural element was in Stravinsky's *The Rite of Spring*.

See also: Ives, *First Piano Sonata:* 4th movement	

2. Syncopation
   1. Syncopation is achieved through a variety of techniques: change of accent, change of meter, etc.

Bartók, *Piano Concerto No. 3:* 3rd movement	cross rhythm and cross accent
Britten, *Peter Grimes: 4 Sea Interludes:* "Sunday Morning"	
Piston, *Symphony No. 4:*	
2nd movement	meter change
4th movement	accent, not meter change

	2. Syncopation is an important element of jazz which has strongly influenced concert music.		
3.	Rhythmic Drive	Antheil, *Ballet Mécanique*	score calls for 2 airplane engines
		Orff, *Catulli Carmina*	
		Prokofiev, *Scythian Suite*, op. 20	
		Stravinsky, *The Rite of Spring:*	
4.	Unusual meters (It is difficult to find recorded examples sufficiently repetitive and slow enough for easy analysis.)	Brubeck, *Time Further Out:*	
		Unsquare Dance	7/4 meter
		Far More Blue	5/4 meter
		Brubeck, *Time Changes:*	
		Unisphere	10/4 meter
		Riegger, *New Dance*	predominantly 7/4 meter
		Tchaikovsky, *Symphony No. 6:* 2nd movement	5/4 meter
5.	Changing meter	Bartók, *Mikrokosmos*, Vol. V, No. 126	2/4, 3/4, 3/8, 5/8, repeated 5 times
	1. The purpose of changing meters is to attempt to bar music according to the natural phrase lengths.	Brubeck, *Time Out:* Three to Get Ready	after introduction, 3/4, 3/4, 4/4, 4/4, repeated throughout
		Stravinsky, *The Rite of Spring:* "Danse Sacrale"	rapidly changing meter
		Harrison, *Suite for Violin, Piano, and Small Orchestra:* 1st movement	
6.	Apparently free rhythms (no fixed meter)		
	1. Unmetered music is an Oriental or Eastern concept for the most part, and is not common in Western music.		
7.	Polyrhythm	Siegmeister recording, *Invitation to Music:* Rhythm and beat	good introduction to rhythm

Melody in Contemporary Music

1. Scale sources (various divisions of the octave) are:
   1. Early church modes
      1. Church modes are rarely used consistently by contemporary composers, although they were rather thoroughly explored by Debussy and others.

Debussy, *Dance of Puck*	Dorian
Debussy, *String Quartet:* beginning	Phrygian
Debussy, *The Sunken Cathedral*	Mixolydian
Ravel, *Daphnis and Chloe:* "Daybreak" theme	Aeolian

   2. Gapped scales
      1. Scales employing selected notes from major or minor scales.
      2. Pentatonic scales date back at least to 2000 B.C.
         (1) Pentatonic scales often consist of intervals of 3 whole steps and 1 step-and-a-half, followed by another whole step.
         (2) The Balinese and Javanese pentatonic scale (*slendro*) contains 5 equidistant steps. Music for the *gamelon* (Javanese xylophone) has influenced a number of contemporary composers.

recording, *Dancers of Bali*	
Bartók, *Mikrokosmos,* Vol. IV, No. 109, "From the Island of Bali"	2 pentatonic scales, one against the other
Debussy, *Pagodes*	
Harrison, *4 Strict Songs for 8 Baritones and Orchestra*	all pentatonic, not tuned to tempered scale; use of retuned strings, piano and harp; also trombone and percussion
Harrison, *Suite for Violin, Piano, and Orchestra*	
McPhee, *Tabuh-Tabuhan*	
Partch, *2 Studies on Ancient Greek Scales*	one pentatonic with Phrygian overtones
Poulenc, *Sonata for Piano, 4 hands:* 2nd movement	
Rogers, *3 Japanese Dances:* No. 1	
Stravinsky, *The Rite of Spring:* "Spring Rounds"	clarinet melody

	3. The whole-tone scale was used most frequently by Debussy and, to a lesser extent, Ravel. It is not used frequently by contemporary composers.	Debussy, *Preludes,* Book I: "Voiles" Hanson, *For the First Time:* "Mists"	most concentrated use of whole-tone scale by Debussy
	1. There are two possible whole-tone scales, one starting on C, the other on C♯.		
	2. An early example of whole-tone scale is in Mozart's *A Musical Joke* (in the violin cadenza) as a scale that goes awry.		
	4. Contemporary composers who are writing tonally generally select material freely from many scales or keys.		
2.	Harmonic sources		
	1. Tertian: harmonic structures based on thirds	Britten, *Peter Grimes: Four Sea Interludes*	long clarinet lines in thirds
		Copland, *Appalachian Spring*	A major triads with E major triads superimposed
		Harrison, *Mass:* Gloria	
	2. Quartal and quintal: harmonic structures based on fourths and fifths	Hindemith, *Mathis der Maler*	oriented around 4ths, occasionally around 5ths
		Piston, *Symphony No. 4:* 1st movement	
3.	Development of melodic material is accomplished through octave displacements.	Copland, *Piano Variations* Copland, *Symphony No. 3* Dello Joio, *Piano Sonata No. 3:* 1st movement, variation I	quasi-serial

1. Though not completely new (it is found in Bach), it is an important contemporary technique.

2. Octave displacement accounts for the jaggedness in much 20th-century music.

Prokofiev, *"Classical" Symphony:* subordinate theme of 1st movement

4. Serial music

1. The twelve-tone system

1. The twelve-tone system (or "technique") was first developed around 1923–4 by Schoenberg in an attempt to create a new system of musical organization to replace the existing tonal system, which he then considered to have been exhausted.

2. The "equal" use of all 12 tones applies only to the early periods after the formulation of the theory. Serial composers now use any group of the 12 tones as a "series" or "basic set."

2. Serial music is no more "mathematical" or "contrived" than the principles of 16th-century counterpoint. Characteristics of serial music include:

1. Automatic octave displacement or octave equivalance—the row presupposes any tone in any octave.
2. A row or series is available in 48 forms: original, retrograde, inversion, retrograde-inversion, and 11 transpositions of each; i.e. 4 prime forms that can be stated at any of the 12 pitches of the chromatic scale.
3. Extensive use of octave displacement, fragmentation, and rarefaction; (e.g., pointillism, *Klangfarbenmelodie*).

Babbitt, *Composition for Four Instruments*	rarefied pointillism
Berg, *Violin Concerto:* 1st movement	clear statement of basic series after introduction
Boulez, *Le Marteau sans Maitre*	
Diamond, *The World of Paul Klee*	compare with Schuller work, below; compare both with Klee paintings
Schoenberg, *String Quartet No. 4:* 3rd movement	unison statement of a 12-tone series
Schuller, *7 Studies on Themes of Paul Klee:*	
"The Twittering Machine"	
"The Little Blue Devil"	an example of "third Stream" music
Stravinsky, *Agon*	uses 3 series of 12 notes each, 2 series of 6 notes each, and "free" material
Webern, *Symphony, Op. 21:* 2nd movement	opening theme is a 12-tone series

3. In "free" serial music the order of the tones is not determined in advance or rigidly followed.	Bartók, *String Quartet No. 3* Bartók, *String Quartet No. 4* Scriabin, "Mystic Chord" compositions	
Harmony in Contemporary Music		
1. Harmony is created by three or more sounds heard together; it is the vertical combination of musical elements.		
2. Contemporary (as opposed to traditional) harmonizations of folk tunes can be felt or recognized without being analyzed.	Harris, *Folk-Song Symphony* Harris, "Streets of Laredo" and "Wayfaring Stranger" in *American Ballads for Piano* Hindemith, "Old Hundredth" in *Trauermusik* Ward-Steinman, "Twinkle, Twinkle, Little Star" harmonization, and "Good Morning to You" harmonization	written for this Project
3. Some contemporary composers create compositions in which the harmony is based on a single interval or part of a scale.	Bartók, *Concerto for Orchestra:* 2nd movement, "Pairs at Play"	each pair of instruments scored in parallel motion at a different interval: e.g., bassoons in 6ths, oboes in 3rds, clarinets in 7ths
	Bartók, *Mikrokosmos:* Vol. V, No. 129, "Alternating Thirds" Vol. V, No. 131, "Fourths" Vol. V, No. 132, "Major Seconds, Broken and Together" Vol. V, No. 136, "Whole-Tone Scale"	

	Bartók, *Mikrokosmos:* Vol. V, No. 137, "Unison" Vol. VI, No. 144, "Minor Seconds, Major Sevenths"	
	Hanson, *For the First Time:* "Bells"	perfect fifths
4. Polyharmonic or polychordal music simultaneously employs chords or triads with different "roots," frequently from two or more keys, combined in various ways. (The lowest note generally functions as the root.) *1.* An early use in "The *Petrouchka* chord" (Stravinsky): C major and F# major combined. *2.* The most systematic exploration and use of polychords has been by Milhaud.	Honegger, *King David:* Brass fanfare (No. 3A)	also implies polytonality
	Milhaud, *Les Choëphores:* 2nd movement, "Libation"	
	Stravinsky, *The Rite of Spring:* "Dance of the Adolescents"	E♭ 7th superimposed on F♭ major chord
5. Bitonal or polytonal harmony is the simultaneous sounding of two or more keys or tonalities that can be analyzed separately (even though the ear tends to relate them and to hear only one root or tonality at a time).	Britten, *A Ceremony of Carols:* "There is No Rose"	voices and harp bass line in F, upper parts move into D and A over ostinato bass in F
	Honegger, *King David:* March (No. 5)	A rare example of polytonality—3 keys are used: A bass ostinato, trumpets in E major, horns in D minor
	Ives, *3 Places in New England:* 2nd movement, "Putnam's Camp"	simulates Ives' memory of 2 bands playing simultaneously in different keys
	Milhaud, *Saudades do Brazil*	various movements were analyzed harmonically
	Prokofiev, *Lt. Kije Suite:* "The Burial of Kije"	polytonal middle section

6. Pandiatonic harmony is a richer, more complex use of tone material which cannot always be broken down into simple chords; it is a free chromatic enrichment of essentially diatonic harmony.

1. Tone clusters are the simultaneous sounding of several adjacent notes.

1. A cluster effect is produced when several notes of one triad are superimposed on an adjacent triad; e.g., C major and D major.
2. Early experimenters with tone clusters were Cowell and Ives.

Cowell, *Advertisement*

7. Quartal and quintal harmony is based on a preponderance of intervals of fourths and fifths.

Bartók, *Piano Concerto No. 2:* 2nd movement — primarily quintal

Milhaud, *Saudades do Brazil:* "Laranjeiras" (No. 11) — quintal and quartal

Many examples by Hindemith and Piston

Jazz and "Third-Stream" Music

1. Improvisation, prevalent during the Baroque and Classical periods, has been reintroduced into concert performance.

2. Jazz forms have been extended into rhapsodies, free forms, etc. by Kenton, Ellington, Herman, Smith, et al.

Bill Smith (on Brubeck record), *The Riddle* — extended jazz composition utilizing improvisation

Smith, *Concerto for Clarinet and Combo* — full-scale "classic" concerto in formal structure, but written in jazz idiom

3. "Third Stream" music was named by Gunther Schuller
   1. "Third-stream" attempts to combine the freedom of jazz with technical innovations of contemporary concert music.
   2. The feeling of jazz is retained, but the greater resources of the contemporary idiom are available.

Schuller, *Concertino for Jazz Quartet and Orchestra*
Schuller, *Conversations* for Jazz Quartet and String Quartet — controlled improvisations in both groups

Electronic Music

1. The first electronic music dates from about 1948.
2. The French school: *Musique concrète*
   1. Live or real sound sources are manipulated electronically.
   2. It is also known in the U.S.A. as "tape-recorder music."
   3. Proponents are: Boulez, Schaeffer, Henry.
3. The German School: Electronic music
   1. Only synthetic (electronically generated) sounds are used.
   2. Techniques include: playing the tape at different speeds, play the tape backwards, cutting and splicing, loop ostinatos, filtering, echo effects.

3. Proponents are: Stockhausen, Eimart, Pousseur.

4. No distinction is made between the schools in the U.S.A. Centers for creating electronic music in the U.S.A. are located at:
   1. Columbia-Princeton (combined facilities):
      Luening and Ussachevsky (Columbia); Sessions and Babbitt (Princeton)
   2. Yale: Powell
   3. Illinois: Hiller
   4. San Fernando Valley State College, California: Křenek

recording. *Columbia-Princeton Electronic Music Center*

Berio, *Circles* (poem by e e cummings) — language broken into vowels, consonants, letters, etc., imitation of electronic technique

Henry, *Vocalise* from recording, *2nd Panorama of Musique Concrète* (Ducretet-Thompson) — human voice sings "ah"

Luening-Ussachevsky, *Poem in Cycles and Bells* — orchestra and tape recorder

Chance (Aleatory) Music

1. Composers of chance music include: Berio, Cage, Stockhausen.

EVALUATION OF THE SEMINAR The seminar participants were invited to prepare a statement evaluating the seminar.

The following excerpts are representative responses:

"Second graders are definitely not too young to understand and enjoy 20th-century music. They are thrilled with the new sounds and the different rhythms. Their ears accept 20th-century harmonies just as easily as they do those used by earlier composers. In fact, children of this age group seem to accept and enjoy contemporary music much more readily than do many adults."

"I must confess I attended the first meeting of this seminar with "tongue-in-cheek"— sort of "I'll listen, but I won't like it" attitude. After the

second meeting, only illness could have kept me away. It has been the most revealing and challenging course I think I've ever encountered.

1. A comprehensive explanation of contemporary terminology—and a great respect for it
2. Steps and devices used for achieving new and unusual sounds
3. Acquaintance with a whole "new" field of composers—names and works that now have a real meaning
4. Concrete evidence of actual use of materials in music education—a confirmation of a secret feeling that 'kids' are always readier to accept new ideas
5. Inspiration (and confidence) to do my best to open new doors to this vast world of music to children"

"I am not a professional musician. I am a classroom teacher with interest in choral music primarily. I feel this seminar has effected personal improvement in the following ways:

1. It has opened a new field of interest to me.
2. It has recalled ideas related to composition not used by me in at least fifteen years.
3. It has presented new materials and ideas for perusal and study.
4. It has acquainted me with many selections previously unknown.
5. It has brought about a change in my attitude toward contemporary music.
6. It has brought about a reversal in my opinion regarding the appropriate time for introducing contemporary music to children."

"Application of the pentatonic scale in classroom experiences has been most successful. Experimenting with various ways of using rhythm instruments for different sounds as well as for rhythmic purposes has created new interest among teachers and children."

"This course has been a very fine musical experience for me. The history re-cap was valuable to me as refresher because I have been out of the music world for many years until this school year. I found that my growing intolerance for the music being written these years was based primarily on my refusal to use my mind as well as my ears to discover what the composers were trying to accomplish."

"I have been trying to lead my fifth and sixth grade music classes to discover the excitement of different meters, both changing and constant. As these children are already somewhat conditioned to dissonances I am finding that they are able to discern themes in all instrumental voices, that they can recognize themes heard once before. One interesting observation by one child after time spent in listening to contemporary music, when we went backward to some 19th-century music, was how old-fashioned that music sounded."

PILOT CLASSES Three schools representing a variety of types in the community were selected as locations for pilot classes. A brief description of each school and pilot class will serve to indicate the circumstances in which the project was conducted.

1. An elementary school with a slightly below average socio-economic level	*Pilot class:* second grade: 38 students, ages 6–8. Average ability, above average music background. Two 30-minute classes per week.
2. An elementary school with an above average socio-economic level	*Pilot class:* Sixth grade: 40 students, ages 10–12. Above average ability, somewhat below average music background. Two 45-minute class periods per week.
3. A junior high school with a below average socio-economic level	*Pilot class:* Seventh-grade: general music class: 65 students, ages 11–13. Average ability range, good music background. Three or four 55-minute class periods per week.

The pilot classes were selected to provide opportunities for experimentation at selected grade levels under the guidance of qualified music specialists. The project was conducted in regular classroom situations, with classes of average or above average size. Pilot classes were chosen as representative in "typical" school situations rather than those which might be identified as academically or musically gifted.

GENERAL CONSIDERATIONS, GOALS, AND APPROACHES In view of the major purpose of the project, i.e., "to explore possibilities for teaching contemporary music in the elementary and junior high school," "creative activities" per se were not given first priority, although each teacher involved children in creative endeavors to the extent possible in the time allotted for the project.

The greater challenge in this instance, however, seemed to be in finding, or developing, *creative approaches to the presentation of recorded contemporary music*. This was no small challenge, since creating genuine interest and purpose for listening in children (or adults) always demands ingenuity.

Among our hypotheses were the following:

1. Children do not have a "natural" aversion to music in the 20th-century idiom. Rejection or lack of enthusiasm for this music reflects more familiarity with non-contemporary music rather than a preference based on exposure to both types. Consequently, the young child should more readily accept the "contemporary sound" as a part of his musical environment, other things being equal.

2. Consideration of the length of the attention span, based on maturation and previous listening experience, is a prime factor for success.

3. Music does not need to be "programmatic" in its origin to be interesting to children, nor should other extra-musical meanings be attached to non-programmatic music as a justification for presenting it to children. Other valid musical approaches can and should be determined.

4. All ideas, approaches or compositions presented would not necessarily be successful. These findings would be as important as the positive results.

The three pilot teachers paced the class work to the Seminar presentations insofar as possible, recognizing that only selected ideas and material would be applicable at each grade level. As the result of this coordinated effort, the materials and ideas tested in the three pilot classes were quite similar.

Pilot Class—Grade Two

1. Sound sources In exploring music of this century, 20th-century developments in science were discussed as a means of stimulating imagination. As a beginning children were asked to think of sounds they might hear early in the morning which could be imitated or reproduced on one or more classroom instruments.

SOUNDS CHOSEN	INSTRUMENTS USED
Alarm clock	Triangle
Bird	Light bells on stick
Little brother playing	Tambourine
Scraping shoes	Sand blocks
Mother sweeping porch	Sand blocks
Footsteps in the hall	Drum
Church bells	Triangle
Two dogs barking	Drum and voices

The sounds were reproduced with the children trying to guess what they represented. These sounds were then substituted, two at a time, for the third phrase of a song, "I Wake in the Morning Early," from the second-grade music text.

The class was introduced to some of the ways a composer uses "new" or "unusual" sounds, using traditional instruments in different ways, using "non-musical" sounds musically, or by inventing new instruments.

The following musical examples were used:

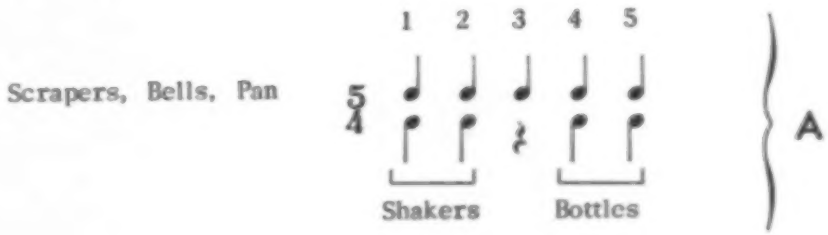
Gershwin, *An American in Paris* (taxi horns)
Respighi, *The Pines of Rome* (nightingale)
Partch, *The Wayward*

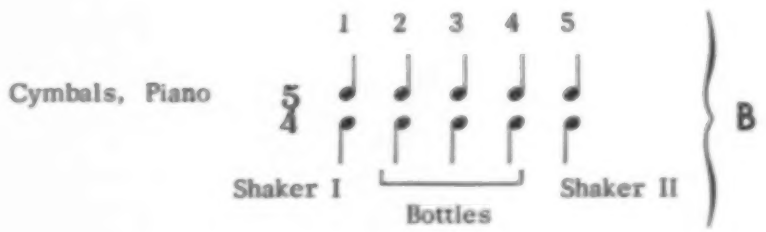
The last composition was introduced to represent a composer who wanted "new" sounds and therefore invented and made his own instruments. After hearing the composition, the children merely indicated it was "unusual" and "like Chinese sounds." The class was then asked to bring something to class which made an interesting "new" sound. The following were brought to the next class meeting.

Baby food jars	filled with water to make a scale
Bandage can	struck with a spoon
Bracelet	
Clothes hanger	struck with spoons
Coffee can filled with gravel	
Coffee can filled with pennies	
14-inch circular tin	struck with serving spoon
Glass bottle with ridges	scraped with spoon
Pie tins	held like cymbals
Pie tins and pieces of tin suspended on a bar	struck with a pencil
Rubber bands (various sizes stretched over cigar box or shoe box)	
Sand in a paper bag	
Soft-drink bottle	blown across mouth of bottle
Soft-drink bottles, filled with water at various levels	stuck with a large bolt
Soft mallet	used on piano strings
Vegetable grater	scraped with fork
Vegetable grater	struck with metal rod

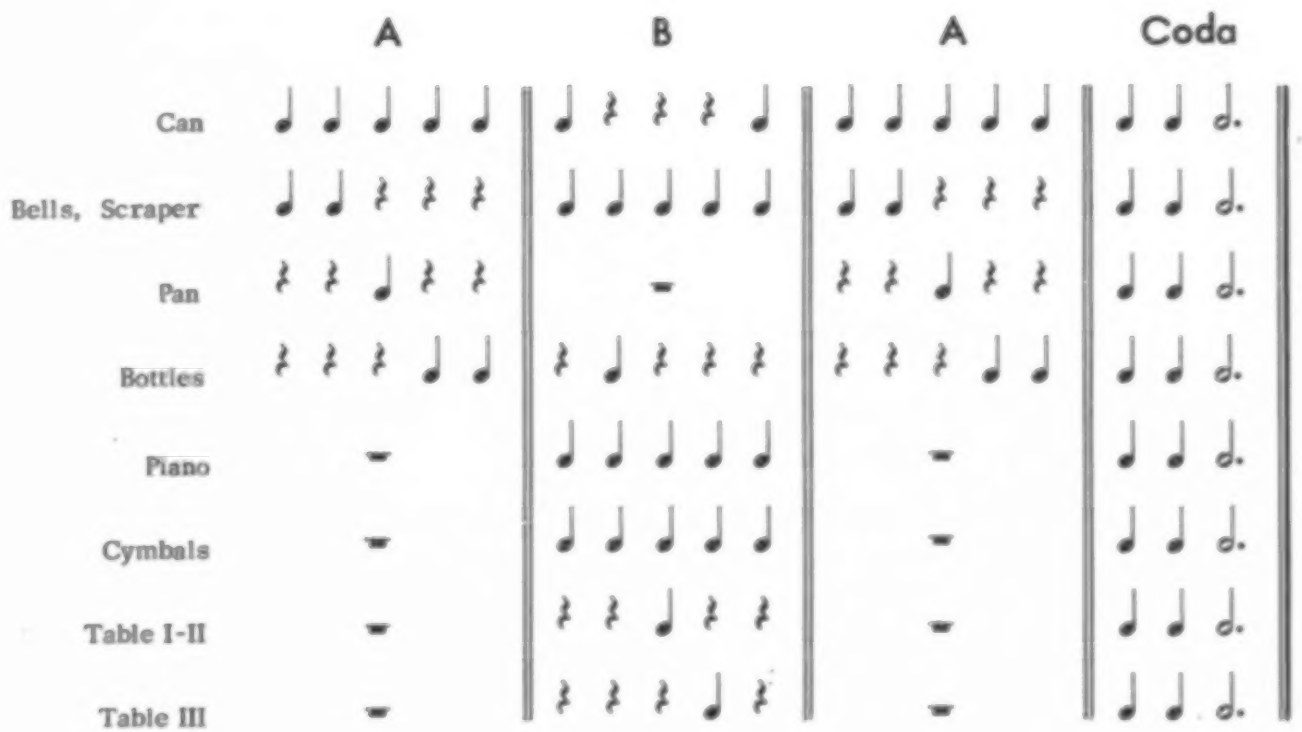
Experience with these sound sources led incidentally to the following discoveries:

1. When you grasp the instrument you are playing, the sound becomes less bright.
2. Instruments need resonating chambers.
3. Sounds are made by striking, plucking, blowing, shaking and scraping.





Later version:



4. The larger the instrument, the lower the sound, and vice versa.

In creating a composition using these new sounds, it was suggested that an unusual meter be chosen, that is, one other than 2, 3, or 4. The class decided to use a 5/4 meter and created a sound composition using scrapers, bells, pans, cymbals, piano, shakers, and bottles in three-part ABA form. (See page 42.)

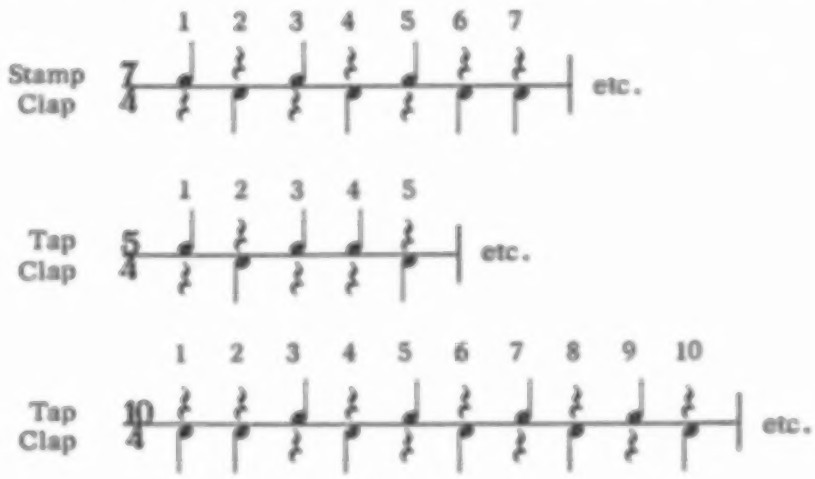
The class also tried to identify other "new" sounds as used by John Cage (children guessed drums, then piano) and Debussy (voices used in *Sirènes*).

2. Rhythm and meter Following a discussion of meter, the class listened to the section on rhythm from *Invitation to Music*. The class was asked to think first of regular beats as related to the human body (heartbeat, breathing, walking, arms swinging, chewing) and objects in the home (clocks). Favorite songs were sung to discover the meter, and conducting patterns for 2, 3, and 4 were learned.

Unusual Meters. The class heard compositions using unusual meter.

Ravel, *Quartet in F Major:* 4th movement (5)
Brubeck, *Unsquare Dance* (7)

The class tried to count 7 while listening to the Brubeck composition and experimented with rhythmic response to patterns such as the following:



Syncopation. Means of syncopation are:

1. Accenting a beat other than the first beat of a measure
2. Rest on a strong beat
3. Accenting a short note or partial beat.

The class listened to a familiar syncopated song played without syncopation. Then, they heard a passage from *The Rite of Spring* by Stravinsky ("Dance of the Adolescents") as an illustration of strong syncopation and rhythmic drive.

Changing meter. The class composed a song using five selected resonator bells (d, f, g, a, c), using a child's poem and changing meter.

Second Grade Original Song

Other class experiences with music involving changing meter included the following:

1. Singing "Little Bird, Go Through my Window" (from *Music Through the Day*), which employs changing meters (2 and 3); observing the metric pattern of measures on the blackboard; counting with singing; and adding meter signatures

2. Listening for changing meter in Brubeck's "Three to Get Ready," while observing the rhythmic pattern on the blackboard.

This was followed by discussion of the use of unusual meters, syncopation and changes of meter by contemporary composers.

Altering familiar meters. The class tried to recogniże familiar tunes with meters changed. (The teacher played "Twinkle, Twinkle Little Star," and "Did You Ever See a Lassie?" in 3/4, 4/4, 2/4, and 5/4).

The class heard the original Jarabe melody (triple meter), which Copland altered in *Billy the Kid,* and then listened for the effect when the composer used 5/4 meter instead of 3/4 and changed at times to 4/4.

Free meter. The class listened to sections of Lou Harrison's *Suite for Violin, Piano, and Orchestra* and tried to determine the meter. (Responses were 4, 3, 5—all really correct, since the accents shift constantly, and the composition apparently uses many meters, plus syncopation).

Polymeter. The term polymeter was introduced and illustrated by words:

The class chanted and clapped the above and made up polymeters such as:

The new ways in which contemporary composers use rhythm and meter was then reviewed.

3. Melody Beginning with the question "What is a melody?" the class heard the melody of "Yankee Doodle" and "America" with piano accompaniment. After hearing the separate parts (bass, alto, and soprano) the children were asked to identify the melody. Through illustration with the piano, the children learned that melodies may be placed in the bass, the middle, or the very high register. After hearing the Shaker theme used in Copland's *Appalachian Spring*, the class tried to follow it while listening to that section of the recording. (Many children guessed that Copland had written the composition.)

Pentatonic scales. Five-tone scales were introduced by using the black keys of the piano. The entire class participated in building a rhythmic background for a melody as follows:

Four students added the following instruments: drum, wood block, triangle, cymbal with stick. Individual students then used the piano to improvise pentatonic melodies over the rhythm accompaniment. (Some children mentioned that it sounded "like Chinese music.")

Further experiences included experimenting with a variety of meters, rhythm patterns, accompanying instruments, and resonator bells for improvising melodies.

Recordings of Bernard Rogers' *Three Japanese Dances* and Colin McPhee's *Tabuh-Tabuhan* were played as examples of contemporary music based on pentatonic scales.

Ways of altering melodies. The technique by which contemporary composers often change or compose melodies by "spreading out the notes" was explained. (The term "octave displacement" was introduced later.) The teacher then played "Yankee Doodle" on the piano, both in the normal version and with "displacement" or "spread out," while the children listened and observed the teacher's hands.

etc.

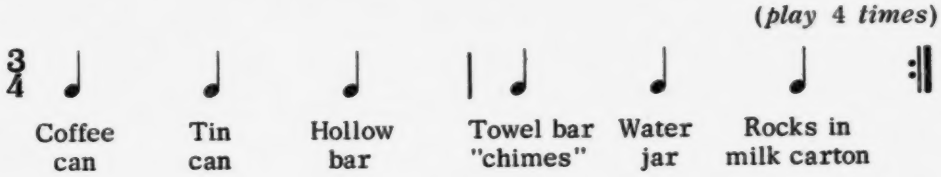
etc.

Stravinsky's *Greeting Prelude* version of "Happy Birthday" was played and the children were able to recognize the melody in this form. A portion of the recording of Stravinsky's *Agon* was played to illustrate music which spreads notes of the melody throughout the orchestra, giving notes to many different instruments.

An attempt was made to "fragment" a song by having different children sing single notes of "Yankee Doodle." This is very difficult for children at the second-grade level, since the ability to hear and to reproduce individual pitches is not yet well established. The technique was more effective when two children sang together.

After listening to Harry Partch's recorded arrangement of "Happy Birthday" as an "Afro-Chinese Minuet," the class fragmented "Happy Birthday" with the resonator bells playing all "birthdays" and a drum playing the two beats

for the person's name while the teacher played the remaining notes on the piano. Original instruments were also used as accompaniment for "Happy Birthday."

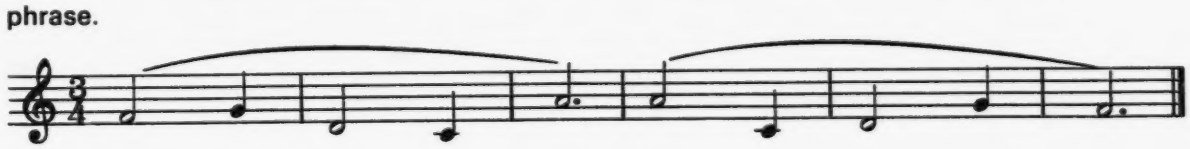


Other versions of "Happy Birthday" played for the children included retrograde (backwards), inversion (upside down) and retrograde-inversion (backwards and upside down).

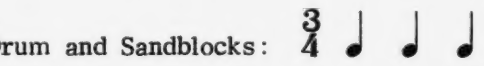
Some of these techniques were reviewed through singing the following songs:

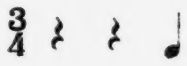
"Little Ducks"	First sung as written	
	Then sung with each child supplying one word	fragmentation
"Goodbye, Old Paint"	First sung as written	
	Meter determined by class	
	Sung again with the whole class conducting	
	Children asked what composer used this melody	Copland
"Grasshopper Green"	First sung as written	
	Then instruments added as accompaniment	
"Sky Bears"	First sung as written	
	Melody located in piano part	in left hand below
	Resonator bells (C and G) added	accompaniment

Creating more melodies. Five resonator bells were selected (C, D, F, G, A) and five children were chosen to play one of each of the bells. The five tones were played in the determined sequence (F, G, D, C, A) until a meter was established (3/4). After the teacher had written the melody, the children discovered that the teacher had written the tones of the first phrase backwards to create a second phrase.



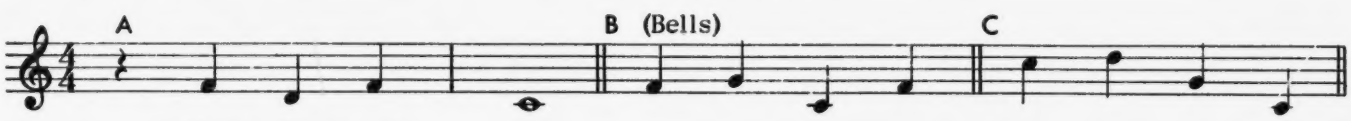
The following instruments were then added as an accompaniment.

Drum and Sandblocks: 

Cymbal with mallet: 

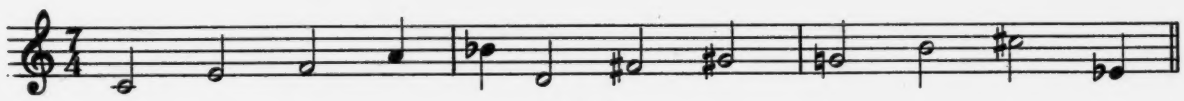
These materials served as an "A" section followed by a section in which the melody was "spread out" on the piano keyboard.

Improvisation and composition. The composer-consultant visited the class and discussed the differences between improvising and composing music. Improvisation based on two groups of four pitches chosen by the class was demonstrated at the piano. The class was then asked to sing some improvised melodies for the words "Now Sing and Play." Four pitches were used to write melodic fragments which were organized in the form of a rondo (ABACABA). For variation each melodic idea was also written in retrograde.

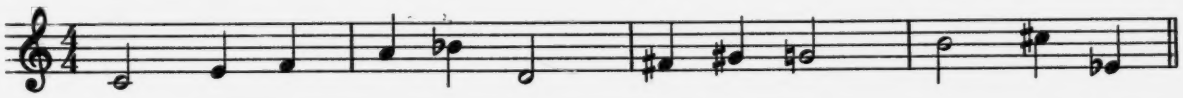


Twelve-tone music. The twelve notes were counted and the sharp and flat name for each black key on the piano was discussed prior to choosing the 12 notes in a random order which resulted in this arrangement.

This was identified as a "tone row," however, it was noted that a composer would not choose the sequence in a haphazard manner. A meter of 7 was chosen and counted as it was played by the teacher.



The class then chose a meter of 4 and played the row in the following form.



The class also listened to a recording of part of a composition by Schoenberg which uses a 12-tone row *(String Quartet No. 4,* beginning at the third movement).

4. Harmony As an introduction, several familiar tunes were played with and without harmony. The class then decided which versions included harmony. Parallel thirds were played on the piano to demonstrate traditional harmony and contrasted to parallel seconds representing a newer type of harmony.

To discover other kinds of new harmony, the class listened to and compared sections of Haydn's *Symphony No. 67* and Stravinsky's *The Rite of Spring*. A Bach *Brandenburg Concerto* and Copland's *El Salón México* were also compared.

Tone clusters. Traditional chords and "clusters" were written and played for the class for comparison.

The class listened for "tone clusters" in *El Salón México*.

Seconds. Musical examples from Bartók's *Mikroskosmos*, Vol. V, No. 132, and *Sonata for Two Pianos and Percussion* were used to demonstrate the use of seconds. The class also listened to "The Twittering Machine" by Schuller, based on a painting by Paul Klee.

Students explored other types of modern harmony by listening and comparing the old with the new. Further technical explanations of modern harmony seemed impractical for children at this age level. The final two class meetings were devoted to a review of materials previously presented. On the last day the class introduced a new song which they had written that week as a going-away gift for the teacher. The song utilized some 20th-century compositional techniques studied during the project.

The following review questions are typical of those asked at nearly every class session.

1. Name a 20th-century composer whose music we have heard.
2. What is one of his compositions?
3. What is it written for?
4. What instrument is prominent at the beginning of the composition? (Referred here to "Rite of Spring")
5. What are some of the things we especially noticed about this music?

Pilot Classes—Grades Six and Seven The sixth and seventh grade pilot classes followed the general sequence and content presented in the second grade. As might be anticipated, the difference in age level, musical background and general maturity made it possible for these students to pursue their study in greater depth. Consequently, creative efforts were often more sophisticated and refined due to a higher level of comprehension.

Although many of the same musical examples were used in all pilot classes, some supplementary materials were introduced in the sixth and seventh grades. The following additional compositions were presented.

GRADE SIX

Sound Sources

Warren Benson, *Rondino* (for percussion)
Warren Benson, *Variations on a Handmade Theme* (for handclappers)
John Cage, *Dance* (for prepared piano)
Henry Cowell, *The Aeolian Harp* (for piano)
Heitor Villa-Lobos, *The Little Train of the Caipira*

Rhythm and Meter

Aaron Copland, *Billy the Kid:* "Street Scene"
Claude Debussy, *Golliwog's Cakewalk*
Morton Gould, *American Salute*
Howard Hanson, *Merry Mount Suite:* Children's Dance
Alan Hovhaness, *Kirgiz Suite*
Robert McBride, *Pumpkin Eater's Little Fugue*

Melody

Milton Babbitt, *Composition for 4 Instruments*
Claude Debussy, *Pagodes*
Darius Milhaud, *Saudades do Brazil:* "Laranjeiras"
Carl Orff, *Music for Children*
Arnold Schoenberg, Canon: *The Parting of the Ways*

Harmony

Aaron Copland, *The Red Pony:* Circus Music
Howard Hanson, *For the First Time:* Bells
Arthur Honegger, *King David:* Fanfare and March
Charles Ives, *Three Places in New England:* "Putnam's Camp"

GRADE SEVEN

Sound Sources

Les Baxter, *Tamboo*
Percussion Sounds of Martin Denny
Harry Partch, *Plectra and Percussion Dances*
Harry Partch, *U.S. Highball*

Rhythm and Meter

Dave Brubeck, *Blue Shadows in the Street*
Dave Brubeck, *Far More Blue*
Ernest Gold, *Rain in Autumn*

Melody

Béla Bartók, *Concerto for Orchestra*
Pierre Boulez, *Le Marteau sans Maître:* 1st movement
Claude Debussy, *Pagodes*
Howard Hanson, *For the First Time:* "Mists"
Colin McPhee, *Tabuh-Tabuhan*
Walter Piston, *Symphony No. 4:* 1st and 2nd movements
William Smith, *Four Pieces for Clarinet, Violin, and Piano:* 2nd movement

Harmony

Benjamin Britten, *A Ceremony of Carols*
Henry Cowell, *Advertisement*
Darius Milhaud, *Les Choëphores:* excerpts
Darius Milhaud, *Saudades do Brazil:* "Copacabana"

Pilot Class—Grade Seven A more detailed description of the activities of the seventh grade pilot class is pertinent, since only one junior high school class participated in the Project. This should be of particular interest in view of the current emphasis on content courses in music for the general student in the junior high school. It should be noted that this class of 65 students was the largest class participating in the Project and that more time was available for the study (three or four 55-minute periods per week) than was allotted to the younger students. The class was divided into 10 study groups with six or seven students in each group. These groups worked together throughout the entire semester.

As a point of departure, examples of music by Harry Partch were introduced to stimulate interest and provoke discussion of possible sources of sound used by composers. Other recorded examples listed under Sound Sources (p. 58) were presented to suggest ideas for class composition. Instruments in the classroom were chosen by the students* for use in a composition. Included were resonator bells, bongos, sandpaper blocks, cello, maracas, and strings of the piano. These instruments provided the sound sources for the first effort in composition with improvisation which was recorded on tape. Listening to the recorded composition served to stimulate further discussion.

Following a brief review of the four basic elements of music, the class listened to "U. S. Highball" by Harry Partch and wrote answers to a series of questions about the organization of the music, such as, "How would you describe the rhythm of this piece?" and "Do you hear any order or form in this composition?" Additional listening experiences led to discussion of musical devices employed by the composer, such as theme and variation, repetition and contrast, development, rhythm, melodic structure, tonal contrast, and texture. Students were also encouraged to bring musical examples of the techniques discussed in class.

In the study of rhythm each study group created a rhythm score in 4/4 meter using three percussion instruments. Percussion scores employing four or more instruments were written later in various unusual meters such as 7/4 and 5/4. The study of syncopation and polyrhythm prepared the class for listening to Stravinsky's *The Rite of Spring* as an example of the use of rhythm in contemporary music.

* It is interesting that all the volunteer participants were boys.

Consideration of melodic ideas used in contemporary music was introduced by playing and listening to pentatonic scales, illustrated by examples from the compositions listed under Melody (p. 58). Improvisation employing pentatonic patterns and melodies, using the black keys of the piano, orchestra bells, and tone bells, provided a background for creating a pentatonic composition incorporating "original" instruments brought to class by the students. Two- and three-note ostinati and rhythmic patterns were created to accompany melodies written by the study groups, culminating in a composition given the title *Japanese Workshop,* which was tape recorded for listening and evaluation.

Further study of melodic devices included discussion of possibilities such as embellishment; changes in rhythm or meter; changes of mode, texture, or range; and octave displacement and fragmentation.

The origin of the 12-tone row and serial music was discussed in preparation for creating a row. Variations of the row employing retrograde, octave displacement, changing meter, and rhythm accompaniment were developed by the class study groups. This experience was supplemented by listening to compositions by Babbitt, Smith, and Boulez.

The study of harmony in contemporary music was preceded by a review of intervals and triadic harmonic structure. Musical examples illustrating tone clusters, quintal harmony, polytonality, and polyharmony were presented for listening and identification (see list on pp 39-40). The emphasis was placed on developing an awareness and understanding of this aspect of contemporary music through listening and recognition of these techniques, since time was not available to create compositions using these devices.

PILOT CLASS CONCLUSIONS

1. Music in the 20th-century idiom is appropriate for and interesting to children at any age level. The earlier it is presented, the more natural the enthusiasm is likely to be. Young children should be exposed to the sound of contemporary music before they are able to intellectualize about it.

2. Activities related to contemporary music, such as compositions for percussion instruments, synthetic scales, and new sound sources provide a unique medium for creativity. The student with little or no background in theory and harmony can "create" with enthusiasm and success and, thus, gain a first-hand contact with music that he might otherwise miss.

3. Active involvement with the elements or compositional techniques employed contributes to a more effective listening experience for students at all age levels.

4. Basic goals and teaching techniques for the use of contemporary music at these levels do not differ appreciably from those used for the successful presentation of any music. Thus, a skillful teacher of music who possesses or acquires some knowledge of contemporary music literature should be able to apply it in the classroom situation. Greater emphasis on 20th-century music at the level of teacher education would help teachers feel more secure in presenting this music to children.

5. A background in "traditional" music is not necessary as a prerequisite for listening to 20th-century music; however, approaches need to be adapted to the background of the group.

6. One of the major goals in presenting 20th-century music to children should be to help them grow in listening discrimination, in order that gradually they will be able to be selective in their choice of contemporary music.

7. Additional contemporary selections that are short in length and simple in structure need to be located or composed, in order that they might be incorporated into the larger program of music education.

RECORDINGS OF SOME CONTEMPORARY MUSIC USED IN THE SEMINAR

COMPOSER	TITLE	NUMBER
Antheil	Ballet Mécanique	Columbia ML 4956
Babbitt	Composition for Four Instruments	Son Nova CRL 138
Bartók	Sonata for Two Pianos and Percussion	Vox 9600
Bartók	Mikrokosmos, Vol. III	Columbia ML 5084
Boulez	Le Marteau sans Maître	Columbia ML 5275
Britten	Peter Grimes: 4 Sea Interludes and Passacaglia	London 6179
Britten	Serenade for Tenor, Horn, and Strings	London 5358
Brubeck	The Riddle	Columbia CL 1454
Brubeck	Time Out	Columbia CL 1397
Brubeck	Time Further Out	Columbia CL 1690
Cage	Amores for Prepared Piano and Percussion	Time 58000
Chanler	Epitaphs	Columbia ML 5598
Copland	Appalachian Spring	
Copland	Billy the Kid	Columbia ML 5157
Copland	Symphony No. 3	Everest 6018
———	Dancers of Bali	Columbia ML 4618
Debussy	Estampes for Piano	Columbia ML 4979
Dello Joio	Sonata No. 3 for Piano	Concert Disc 1217
Dello Joio	Variations, Chaconne, and Finale	Columbia ML 5263
Diamond	World of Paul Klee	CRI 140
Hanson	The Composer and His Orchestra	Mercury MG 50175
Harrison	Four Strict Songs for 8 Baritones and Orchestra	Louisville 58-2
Hindemith	Mathis der Maler	Columbia ML 4816
Hindemith	Trauermusik for Viola and Strings	Epic LC 3356
Honegger	Pacific 231	Westminster 18486
Honegger	Rugby	Westminster 18486
———	Invitation to Music	Folkways FT 3603
Ives	Hallowe'en	Cambridge 804
Ives	Three Places in New England	Mercury MG 50149
Luening- Ussachevsky	Poem in Cycles and Bells	CRI 112

McPhee	Tabuh-Tabuhan	Mercury MG 50103
Milhaud	Les Choëphores	Columbia ML 5796
Milhaud	La Muse Menagere	SPA 12
Milhaud	Saudades do Brazil	Vanguard 1023
Mossolov	Iron Foundry	Folkways 6160
Partch	The Wayward: U. S. Highball	Gate 5 Records, Issue B*
Piston	Symphony No. 4	Columbia ML 4992
Prokofiev	Lieutenant Kije Suite	Columbia ML 5101
Rogers	Leaves from the Tale of Pinocchio	Mercury MG 50114
Rogers	Three Japanese Dances	Mercury MG 50173
Schuller	Concertino for Jazz Quartet and Orchestra	Atlantic 1359
Schuller	Seven Studies after Paul Klee	Mercury MG 50282
Smith	Combo Concerto for Clarinet	Contemporary 6001
Stravinsky	Agon	Columbia ML 5215
Stravinsky	Firebird Suite	Columbia ML 4882
Stravinsky	Le Sacre du Printemps	Columbia ML 4882

* Order direct from the composer: Mr. Harry Partch, P.O. Box 491 Petaluma, California.

FARMINGDALE PROJECT

Farmingdale Public Schools
Farmingdale, L.I., New York

TWO APPROACHES TO CREATIVE EXPERIENCE IN MUSIC

COORDINATOR: *Herbert Alper,* District Supervisor of Music
Farmingdale Public Schools

CONSULTANT: *John Colman,* New York City

Thomas W. Guilford
Superintendent of Schools

BACKGROUND AND PURPOSE OF THE PROJECT For several years the Farmingdale schools have experimented with an approach to the study of music based on the thesis that student involvement in total musical experience (composition, performance, and listening) provides greater motivation and results in more musical growth and learning than the traditional performance oriented program. The experimentation has been focused on learning through discovery and creative experience, using 20th-century composition techniques as a point of departure. The underlying philosophy is based on the spiral curriculum approach to conceptual teaching and learning advocated by Jerome Bruner. The extent of the experimentation has been somewhat limited, since the classes were conducted during the school year. A summer pilot project of six weeks provided an opportunity for more intensive study and exploration of the interrelationship between creative experiences in composition and the development of musical resources through training in the rhythmic studies and movement.

ORGANIZATION Thirty-one students from grades six through eight were selected to participate in the project. The students were chosen on the basis of their instrumental and vocal experience and their musical potential, as indicated by recommendations from teachers and a test of pitch and rhythm recognition. The group was also chosen to include a sufficient number of instrumentalists to perform student compositions.

The students selected were divided in two groups of approximately equal number by random selection. The groups were instructed for three hours, five days a week, for the six week period. The schedule was arranged to provide daily instruction to both groups by the two teachers. Although no attempt was made to correlate the two teaching approaches, daily observation and conferences by the teachers served to provide opportunities for continuing evaluation.

The organization of content in guiding creative experiences must include provision for flexibility in consideration of individual differences and to encourage experimentation and independent thinking.

I. Creative Experience Using 20th-Century Techniques

An outline of the subject presented was:

1. Discussion of music as sound
2. Discussion of form in music
3. Twentieth-century techniques
   - Natural vocal sounds
   - Twelve-tone row
   - Setting natural speech patterns
   - Pandiatonic harmony
   - Triadic harmony
   - Symmetrical chords

4. Instrumentation and sonorities
   - Percussive gadgets
   - Improvisation on all instruments
   - Small ensembles
   - Tunable percussion
   - Brass choirs
   - Open woodwinds
   - Nasal type instruments
   - Piano
   - Voice
   - Electronic instruments

EXPLORATORY EXPERIENCES

1. Groups of 3, 4, and 5 children created vocal compositions using unorthodox sounds, such as shouts, whoops, clicks, and grunts, and devising their own system of notation. After rehearsal, a performance for the class was followed by discussion and critique regarding general concepts of composition.

2. The groups then were assigned to approximate the vocal sounds by using their instruments in normal and unusual ways (back of the violin, brass instrument mouthpieces, etc.).

3. Students were asked to bring an object from their room at home and to explore various sounds which could be produced with this object as a basis for experimental composition using new or unusual sources of sound. The "instruments" brought to class included a wastebasket (drum), perfume bottle and bobbie pins, machine-gun shell and spiral bound notebook, Morse-code oscillator, and night table lamp.

4. Following a study of intervals, the construction of the 12-tone row was introduced, including presentation of retrograde, inversion, and retrograde inversion. After a row had been determined, several instrumentalists experimented with improvisation for the class. The students were assigned to construct

a tone row, using the several devices already introduced, and to shape an instrumental piece to be performed in class the following day.

5. The students were assigned to take a page from a newspaper, determine rhythmic values of the natural speech patterns, and set these rhythms to pitches to be sung by the class.

6. Triad construction was introduced to be used for accompaniment on the piano or with a combination of instruments.

7. The use of open woodwind sonorities (piccolo, flute, and clarinet) employing triadic or bitonal devices was presented as the introduction to instrumental sonorities. Students were encouraged to employ all the devices previously studied, but were free to select any system of pitch organization already introduced. At this point special emphasis was given to the importance of presenting accurate scores written in concert pitch. Copying details were carefully observed to insure accurate and correct notation.

8. Nasal sonorities included oboes, bassoons in certain registers, and brass with some mutes.

9. Stringed instrument sonorities were introduced with the use of symmetrical chord structures. Performance of these pieces was perhaps the most difficult, owing to the limited technical proficiency of the performers. However, the challenge contributed to substantial improvement in performance.

10. Recordings of compositions by Stravinsky, Berg, Webern, Schoenberg, Milhaud, Honegger, Dello Joio, Ives, and Varèse were introduced in the third week. The class discussed each composition with respect to the use of sonorities, harmonic devices, and other similar matters.

11. An explanation of the organization of traditional and modified scales was followed by an assignment to use one of these scales (or an original scale) as the basis for a piano piece.

12. Brass-instrument sonorities groupings, including both conical and cylindrical, were the basis for an assignment in pandiatonic harmony.

13. The final assignment was to write a piece for orchestra using the instrumentation available in the class.

14. A demonstration program was presented during the final week of the class.

15. Rhythmic development was not given any special emphasis, since this aspect of music was the foundation of the work conducted by Mr. Colman. The influence of experiences in rhythmics was apparent in the rhythmic freedom and understanding demonstrated in creative writing.

SUMMARY AND EVALUATION During the six-week period more than 300 pieces were written, ranging from five-measure fragments for one instrument to pieces of more than three minutes in length for orchestra. The enthusiasm and excitement of the children was apparent throughout the entire Project. The performance of all creative efforts in class was significant in contributing to student motivation. The involvement of the children in the total process of music making is an adaptation of the post-hole technique to the teaching of music. Parallels in education include learning about art through creative experience with 20th-century art techniques (mobiles, collages, etc.) and poems and compositions by children in the language arts.

The spiral curriculum concept provides for a pattern of teaching the same things relearned with increasing degrees of difficulty through reënforcement. The distinction is in degree rather than subject-matter content. The application of this concept to the Project was based on the premise that presentation of the tools and techniques for making music will, through creating, lead to musical discovery.

Initially, refinement of technique is not a primary consideration, since the development of skill is related to motivation resulting from an awareness of the need for skills. One of the limitations of a short-range project is that the results may suggest a superficial, random approach, as compared with a more highly structured organization of the music curriculum. The validity of the thesis can only be determined by supporting evidence that might result from a long-term project, which would provide comparative data.

II. Developing Musicianship through Rhythmic Studies and Movement

This approach was developed from ideas originated by Jacques Dalcroze, who proposed that physical movement be combined with musical sound. It was his belief that this plan would contribute to the development of musicianship more effectively than isolated aural and rhythmic experiences.

The lessons in this six-week program were designed to assist students in discovering their own musical resources through experience with all musical elements, both isolated and in synthesis. As these concepts become more vivid, music assumes the form of a native language in which they were able to think, imagine, construct, and create. The potential value rested in the direct appeal to, and use of, human instincts.

Since both music and movement are inherently difficult to translate into precise verbal equivalents, the relationship of actions to sounds was emphasized as a point of departure. With the body assuming the role of a musical instrument, movement in response to every type of musical stimulus is emphasized in combining hearing, thought, and action. Movement, the source of musical rhythm, is itself the means for rhythmic awareness. In experiences unencumbered by instrumental or vocal technique the students learn to transform something abstract into something with life and meaning.

The use of energy (or relinquishment of it) in permitting the muscles and body to resist, or give way, to gravity is dependent on the will. Because of this, physical movements act more powerfully upon the total organism than any other medium, since they speak first to the instinct. Only through the latter will the mind be truly awakened to effects within musical time.

The movements are those used in daily life: steps, gestures, and swinging movements. For musical purposes they differ chiefly in respect to the amount of total body-weight deployed, and in the manner it is used. All three types of movements are interchangeable; each may assume a leading or supporting function, representing whatever musical ingredient is prominent. They should be

considered as equivalents in movement of aural effects in time. The step, in particular, is both flexible in time and motion. It is capable of almost any temporal effect, from the most simple metrical succession of equal units to the most complex rhythmical designs.

Experiences with rhythm, melody, and harmony were organized in the following sequence.

RHYTHM These experiences indicate the type of instrument the students must make of their bodies, one demanding complete coordination and disassociation of their limbs. Such a challenge brought to the capacity to hear others in ensemble playing and singing, and to imagine and produce contrasting rhythmic patterns simultaneously in improvising and composing.

1. Reproduce in movement the flow and energy of sounds played on the piano. "Follow" musical changes produced on the piano with respect to speed and energy. Observe and reproduce the sense of climax on the musical context heard.

2. Lengthen beats by changes in values of pitches and rests, and through fluctuation of musical flow.

3. Divide beats into simple subdivisions. Produce basic simple patterns.

4. Combine basic simple patterns into more complex groups.

5. Examine and experience metric shapes: time-signatures, recurrent patterns, etc.

6. Divide beats into more complex subdivisions: compound subdivisions. Produce basic compound patterns.

(etc.)

7. Combine basic compound patterns into more complex groupings in appropriate meters.

(etc.)

8. Exercise in diminution and augmentation of patterns.

9. Produce and play ostinato patterns against free improvisation on the piano.

10. Reverse the above procedure: students' free improvisation against piano ostinato.

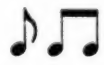
11. Develop facilities in polyrhythms and contrasting patterns produced by hands and feet or voice and hands. Prepare scores.

12. Study complementary rhythms and syncopations.

13. Exercise patterns in contrast to a prevailing meter:

Imbroglio etc.

14. Exercise in distortion of patterns.

becomes  or etc.

15. Study the relationships between 3/4 and 6/8; 3/2, 6/4, and 12/8; 15/8 and 3/

16. Exercise in independent subdivision of the same beat: 2 against 3, 3 against 2, etc.

MELODY Attention was then focused on pitch through solo singing, unison singing, and part singing. The musical material ranged from intervallic exercises to polyphonic motets. Improvisations, individually and in groups, and conducting were also included.

Every musical example was heard and sung until it was recognized as a tangible sonority. As in rhythmic experiences, the approach was from doing to knowing. Above all, the emphasis was given to developing an awareness of intervals as the building stones of music. The instruction and exercises were developed around the following topics.

1. Ingredients of melody pre-existent in speech:
   stress, timbre, movement-repose, etc.

2. The typical linear quality of melody
   Step-wise motion: rise and fall
   Melodic curves of speech
   Half-steps, modes, scales

   Translate speech-melody into staff notation

3. Motion by skips
   Easy skips in generally step-wise motion

   Note the tendency in speech to use skips when calling someone. Experiment and notate skips in speech.

4. Use of a chain of seconds in composing and sight reading
   How a chain of seconds produces motion

5. Steps and skips in plain chant and Renaissance music
   Steps and skips, if they are the only tone or the first tone of a series on a syllable, produce emphasis by change of direction.
   Melisma produces emphasis by prolongation.

   Using these devices, invent melodies on given text.

6. Intervals—the shape and "feel" of intervals
   The meaning of an ascending interval differs from the same descending interval
   Roots
   The distance between the root and its complement
   Inversions of intervals (a fourth becomes a fifth, etc)

7. Tension in intervals
   The order of gradation of tension
   The overtone series—the family of intervals
   The role of intervals as basic materials of music
   The binding force of intervals

8. The combination of intervals:
   Major and minor triads
   Triad inversions and seventh-chord inversions

9. Feeling harmonic cells and fields in a melodic succession
   The effect of harmonic cells and fields in halting the flow of harmonic rhythm

10. Combining harmonic cells and fields with the chain of seconds
    How each of these two forces acts upon tones, endowing them with metrical and rhythmical shapes, independent of external rhythm

11. Non-harmonic tones:
    Neighboring tones, passing tones, etc.

Organize the class as a 3- or 4-part chorus

12. The harmonic tension of intervals maintained in chords
    The order of gradation of chords according to this principle of harmonic tension

13. Roots of intervals and the resulting roots of chords

14. Tonal centers
    Harmonic cells and fields during a succession of chord-roots; (the tonal center in the one tone that more or less predominates after such a succession)
    Tonality as harmony spread out melodically in time *

15. Ternary tunes (ABA) leading to lyric forms
    Binary tunes (AB) leading to sonata forms

* To quote Milton, "Harmony is Melody, writ Large."

HARMONY The lessons in rhythm and melody were used as the basis for stimulus. For example, the use of rhythm as a point of departure leads the students to imagine a musical tempo. This required the ability to imagine movement. If the art of imagining is truly vivid, sounds of a certain pitch, shape, and texture are suggested, and the student associates the image with actual playing. These sounds suggest others, which are then realized in actual performance. The basic approach was through improvisation, with composition primarily as a means for clarification.

Pitch represented another point of departure. Any pitch selected at random might be repeated until the student tires of it and changes to another sound. The two sounds lead to a return to the first pitch, or, a new third pitch. The interrelationship of these sounds provides the impetus for further development toward a small improvisation or composition. From these simple beginnings, the exploration of harmony was developed.

CLASS ACTIVITIES One of the preliminary exercises was intended to focus attention on starting a movement on time. This was initiated by asking the class to jump vertically and return to the point of origin. This action was linked to a musical motive represented by three consecutive notes of equal length, followed by a staccato chord, the landing following the jump to coincide with the chord.

Ex. 1

The example was played at a different tempo each time without advising the class before the playing began. This experience resulted in the realization that they could

determine, by thinking, whether a movement represented a rhythmic goal or a preparatory function. The effects of rhythmic structure, experienced with a single movement, provided an essential preparation for tempo. Even more important, the experience led them to *think while acting in musical time*.

To this point music and movement had been sporadic, a combination of stops and starts, lacking the integrating principle essential to musical flow or continuity. The same example was used to introduce varieties of tempo in a context of undertermined meter. Thus, a series of steps beginning on the ictus was continued four steps after the playing stopped, regardless of prevailing meter.

Ex. 2

Each new example of tempo demanded a different type of movement determined by speed plus energy.

Sustaining one of the units of pace was achieved by combining movements: skips, leaps, and claps.

Ex. 3

Three short steps were followed by a leap (on the fourth beat) high enough to keep the body in the air until the following ictus. This ability was further developed by experimentation in shifting the temporal location of the ictus.

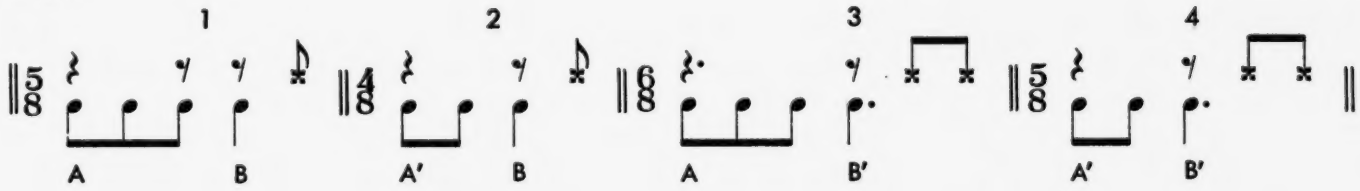
Ex. 4

Here the air-borne clap becomes the ictus and the landing after the leap is less important. These completely opposed motifs were fitted into a phrase, adding a resting point.

Ex. 5

The original motif was then modified by contrasting or expanding one or both of its cells.

Ex. 6



This effect is mastered in the following stages:

1. Measure 1 is repeated until a vocal signal was given; change to measure 2; continue until vocal signal was given; change back to measure 1; if a different vocal signal is given, the change is to measure 3. (See Example 6)

2. The same sequence, except that measure 2 or 3 is performed only once before returning to measure 1.

3. Measure 1 is repeated until a signal is given; then the change is to measure 4, which is repeated until the next signal. The movement on the dotted quarter becomes a lunge, rather than a skip.

4. The same sequence is repeated, except that measure 4 is performed only once.

5. With this background the students are able to recognize these elements in a phrase.

Ex. 7

This was realized in movement and then notated on the blackboard, representing patterns for both hands and feet.

The example was then "orchestrated," using a few percussion instruments. Visualizing the movement was most helpful in writing, as in playing. The carry-over into singing was evident in performance of a canon by Hindemith and the speaking chorus of the *Geographical Fugue* by Toch. Their ability to achieve line and flow in the canon and rhythmic subtlety in the *Geographical Fugue* represented evidence of the relationship to their previous experience.

SUMMARY AND EVALUATION Experience in rhythmics provided the opportunity to discover musical elements for one's self rather than be told about

them. The application of fluctuating or static rates of flow, energy, and speed of music to movement within and through space became an exciting challenge. The vital quality of this type of study lies in the fact that the reverse of its process constitutes the foundation of imagining and creating music.

Ideally, these experiences should accompany other musical studies during the early years, since more time is required to develop these skills fully. More emphasis on solfege and improvisation would have been desirable. However, in view of the schedule, this was not possible.

III. Summary Observations on the Farmingdale Pilot Project

This Pilot Project was planned to explore the interrelationship of two approaches to creative experience, rather than to compare the effectiveness of teaching techniques. It is recognized that this objective could be realized more fully under the guidance of one teacher who would incorporate both approaches.

The reports should not be interpreted as evidence of the superiority of either approach. Indications of the success of either approach, based upon student interest and enthusiasm, can only be evaluated at this time on the basis of six weeks of intensive study. Additional evidence would be contingent upon further investigation for a longer period of time. The reports do indicate that the two approaches were complementary and were mutually reënforced through the dual approach. Thus, the desirability of incorporating these experiences as part of the music curriculum would seem to merit consideration.

SUMMARY AND FUTURE IMPLICATIONS

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The Pilot Projects described in the foregoing reports have afforded opportunities to explore approaches in the presentation of contemporary music and to experiment with techniques for providing creative musical experiences for children. Although creative activities are not new to the music curriculum in the elementary school, traditional rather than contemporary music has usually been the basis for instruction.

The limitations of the Projects are recognized, both with respect to the amount of available instructional time and the length of the Projects. However, the resulting interest and motivation on the part of both teachers and pupils strongly support the basic premise that children are receptive to contemporary music and are capable of employing contemporary techniques in creative activities. The experience of these Projects suggests both the need for and advisability of additional pilot studies which would provide opportunities for further investigation.

It should be emphasized that these initial Pilot Projects were exploratory and experimental in design and not intended to suggest an organized pattern of instruction. It also should be understood that the inclusion of contemporary music is intended to supplement and expand the present music curriculum.

In general, traditional creative experiences have been emphasized only in the primary grades, and, in many instances, were limited to activities that were entertaining rather than educational. In addition, emphasis on creative experiences has usually decreased at each succeeding grade level with little or no emphasis in the intermediate grades or the junior high school. Although the *Contemporary Music Project* is interested in identifying and developing the creative talent of gifted students, it is also vitally concerned with the application of a "creative" approach to teaching *all* children.

The success of the Pilot Projects has been due to the creativity and imagination of the music teachers involved. However, the major responsibility for teaching music at the elementary level is currently assigned to classroom teachers. It is apparent that the effectiveness of a "creative" approach will depend upon the ability and training of these teachers. The limited musical training generally required of classroom teachers indicates the need for additional pre-service and in-service education in music. The interest and enthusiasm of classroom teachers who participated in follow-up workshops after the Projects in Baltimore and San Diego is particularly significant, since they might have been understandably apprehensive, in view of their limited knowledge of music.

The creative approach to teaching is often accompanied by false assumptions. It is a common fallacy that creativity in the classroom promotes a lack of discipline. The fact that schools must provide a more permissive climate to insure a favorable environment for learning through discovery does not imply that discipline will be adversely affected. It does suggest the need for evaluating teaching techniques.

Contrary to some opinion, creative experience as an approach to learning does not offer a panacea for all educational problems, nor will it produce geniuses. The intelligence, environment, motivation, and potential of the pupil remain the determining factors in that respect.

Evaluation of the creative effort of the child is a crucial matter. The distinction between encouragement to the child and overestimating the intrinsic value of his creative effort is important. It should be obvious that evaluation in terms of adult standards is inappropriate. Teachers must recognize that creative experiences in music are not intended to produce musical masterpieces, any more than assignments in English composition are likely to result in great sonnets or essays.

Teachers may be inclined to consider a creative approach with distrust, since it is not susceptible to the structured organization usually found in the schools. The creative process would be thwarted by a highly organized procedure, since a specific, well-defined point of departure or sequence cannot be determined in advance. Teachers must rely upon their own inventiveness and imagination rather than a workbook or syllabus. However, it should not be inferred that basic guidelines for teachers could not be developed.

Although experimentation and discovery are important aspects of creativity, the basic skills and tools of making music are also essential and should be presented in the context of creativity. A balance should be achieved between the extremes of a highly structured curriculum (over-emphasizing skill developed through drill and imitation) and unrestricted freedom, which disregards the need for self-discipline.

One of the implications of this approach to teaching is that it may be necessary to evaluate the results in other than traditional ways. The possibility that achievement may be more difficult to evaluate should not be the determining factor in deciding curriculum content. A highly organized, systematic methodology is not necessarily desirable, since it may not provide the flexibility essential to learning through creative experience.

In the past the structure of the music curriculum has presupposed a sequential pattern based upon the way it was *assumed* children learned, rather than *how* and *what* they could learn. Any effort to reshape the curriculum should include consideration of not only *what* children can learn but also what

should be taught to achieve the desired goals. The ability to learn a given body of subject matter should not be the sole criterion for determining curriculum content.

The Pilot Projects have reinforced the point of view that the ability of children is often underestimated, and that they are challenged by experiences which include creating and performing in conjunction with listening. The interest and motivation evidenced by students participating in these Projects suggests that involvement in the creative process is a stimulating and effective way of learning that should be incorporated as part of the music curriculum.